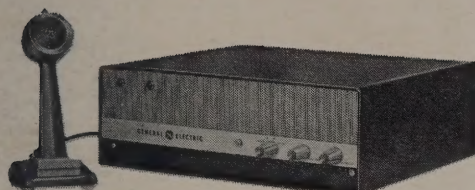




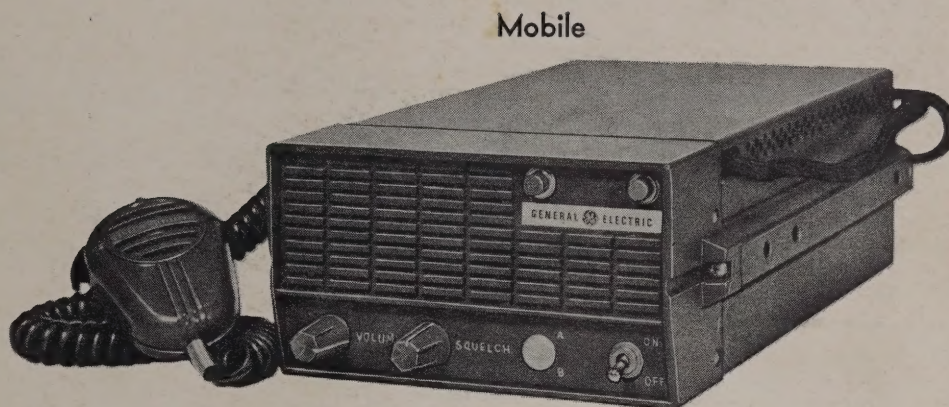
communications

DATAFILE

27—50 MC 15-WATT G-E PACER 2-WAY FM RADIO

General Electric
PACER**27-50 MC**

Station



Mobile

SPECIFICATIONS*

GENERAL

	Mobile	Station	Operable temp. range	—30° C to +60° C
Frequency range	27—50 megacycles	27—50 megacycles	Number of tubes	15 (one additional tube in 2-freq. units)
Supply voltage	13.8 VDC $\pm 10\%$ (will operate over range of $\pm 20\%$, per EIA standards); positive or negative ground	117 VAC $\pm 10\%$, 50/60 cps (will operate over range of $\pm 20\%$, per EIA standards)	Number of transistors	2 (in mobile power supply only)
Power consumption			Frequency stability	Within $\pm 0.002\%$ of assigned center frequency over specified temperature range (reference +25° C) without oven
Standby	4.2 amperes at 13.8 VDC	60 watts	Max. recommended freq. spacing for 2-freq. operation	0.4% of operating frequency
Transmit	7.5 amperes at 13.6 VDC	131 watts		
Dimensions (H x W x D)	4-1/4" x 7-3/4" x 12-1/2"	4-3/4" x 13" x 13"		
Weight	10 pounds	29 pounds		
Duty Cycle	Transmit 20% (one minute transmit out of each five) EIA			

TRANSMITTER

Power output	15 watts
FCC filing designation	Mobile: ES-28-A Station: ES-29-A
Crystal multiplication factor	12
Spurious and harmonic radiation	At least 60 db below maximum radiation at operating frequency and rated power output
Modulation	Adjustable from 0 to ± 7 -KC swing with instantaneous modulation limiting.
Audio frequency characteristics	Within ± 1 db and -3 db of a 6-db/octave pre-emphasis curve from 300 to 3000 cps (1000-cps reference). Post-limiter filter per FCC and EIA requirements.

RECEIVER

Sensitivity	0.5 microvolt for 20-db quieting 0.3 microvolt for 12-db SINAD
Selectivity (20-KC channels) EIA method	60 db down at ± 20 KC (adjacent narrow-band channel) 100 db down at ± 20 KC
20-db quieting method (not approved by EIA or IRE)	
Spurious responses	85 db down
Modulation acceptance	± 6 KC (narrow band only)
Intermodulation (EIA method)	70 db down at usable sensitivity
Squelch sensitivity	Adjustable; will open at less than 0.25 microvolt at critical setting
Audio characteristics (EIA method)	Within ± 2 db and -8 db of a 6-db/octave de-emphasis curve from 300 to 3000 cps (1000-cps reference)
Audio output	1.0 watt with less than 10% distortion; 1.5 watts maximum with less than 15% distortion

*These specifications are provided for the convenience of the serviceman and are subject to change without notice. For the latest guaranteed specifications refer to the appropriate published specification sheet.


GENERAL ELECTRIC

First Revision

August 1962

FOLDER NO. 9008**General Electric Pacer: 27-50 MC**

CONTENTS

OF

DATAFILE FOLDER NO. 9008

Installation Manual	
Mobile	LBI-3201
Station	LBI-3378
Transmitter Alignment and Servicing	RC-658
Receiver Alignment and Servicing	RC-659
Service Sheets (Elementary and Outline Diagrams and Parts List)	
Transmitter Board Model 4EF21A10	RC-660
Front End/Oscillator Board	
Models 4EG16A10 & 11 (27—37 MC)	RC-661
Models 4EG16A12 & 13 (37—50 MC)	RC-662
IF/Audio Board Model 4EL12B10	RC-663
Control Unit/Power Supply Model 4EC38A10	RC-631
Control Unit/Power Supply Model 4EC48A10	RC-855
Remote Control Panel Model 4KC13A10 & 11	RC-871

SEE ALSO

DATAFILE FOLDERS FOR

CONTROL EQUIP: Control Unit/Power Supply EC-38-A	4059
TONE EQUIP: Channel Guard, G-E Pacer	5008

NOTES



COMMUNICATION PRODUCTS DEPARTMENT
MOUNTAIN VIEW ROAD • LYNCHBURG, VIRGINIA

(In Canada, Canadian General Electric Company, Ltd., 830 Lansdowne Rd., Toronto, Ontario)



DATAFILE BULLETIN

FILE UNDER:

COMBINATIONS

G-E Pacer:
27-50 MC

BULLETIN NO:

9008-1

DATE:

December 1961

Purpose: DISCRIMINATOR DRIFTING MINIMIZED

To hold the discriminator within 1 KC of its initial on-frequency setting, with variations in ambient temperature.

Equipment: Pacer low-band receiver IF/Audio Board

Revision: Model Revision

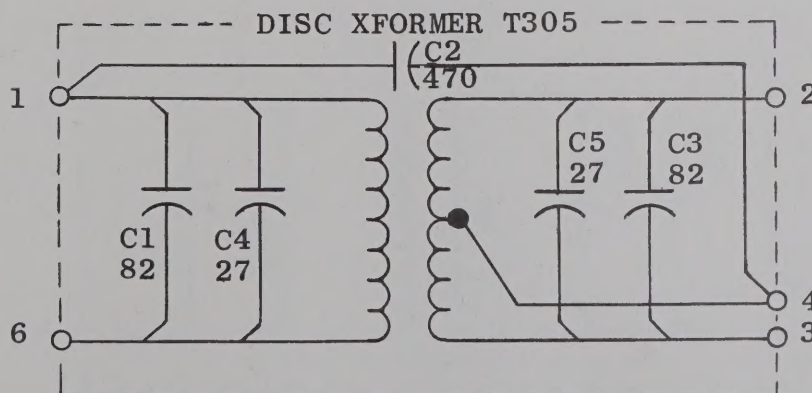
4EL12B10

A

Symptoms: Discriminator reading drifts with changes in ambient temperature, making it difficult to "net" the radio system.

Change: Revision A improved the temperature compensation of the discriminator transformer (T305) by adding capacitors C4 and C5 and changing capacitors C1, C2 and C3 as follows:

<u>Symbol</u>	<u>Description</u>	<u>G-E Part No.</u>
C1 & C3	Capacitor, silver mica: 82 pf $\pm 5\%$, 500 VDCW, sim to Electromotive DM15.	7489162-P25
C2	Capacitor, silver mica: 470 pf $\pm 5\%$, 300 VDCW, sim to Electromotive DM15.	7489162-P43
C4 & C5	Capacitor, ceramic disc: 27 pf $\pm 5\%$, 500 VDCW, temp coef -1500.	5496218-P849



- Field Solution: Because of the time required to remove the cover from the discriminator transformer and mount the capacitors inside, capacitors have been selected which can be added outside the transformer, but still relieve discriminator drifting. These are not the same capacitors used in Revision A. To make the change in the field:
1. Add one temperature-compensated capacitor (15 pf $\pm 5\%$, 500 VDCW, temp coef -1500, G-E Part No. 5496218-P844) across primary terminals 1 and 6 of the discriminator transformer CLOSE UNDER THE PRINTED BOARD.
 2. Similarly, add another 5496218-P844 capacitor across secondary terminals 2 and 3, so that the bottom shield can be replaced.
 3. In mobiles using Channel Guard Unit Model 4NS13A11, Revision A or earlier, replace electrolytic capacitor C617 with 0.22-uf, 50 VDCW Mylar capacitor 5491189-P8.

Ordering

Information: To modify a Pacer receiver having Channel Guard, order FEB Kit No. 208 (approximate cost \$2.25) from Service Parts. This kit supplies the three capacitors required. For modifying Pacer receivers without Channel Guard, order two 5496218-P844 capacitors per receiver (approximate cost \$25 each).

DATAFILE **BULLETIN**

FILE UNDER: **COMBINATIONS**

G-E Pacer:
27-50 MC

BULLETIN NO: 9008-1

DATE: December 1961

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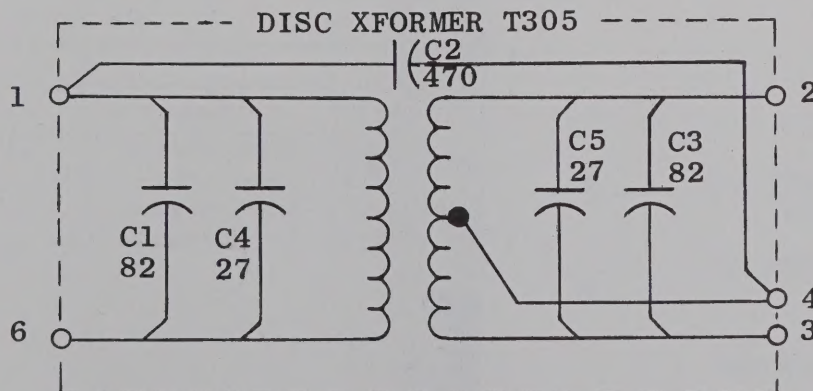
Equipment: Pacer low-band receiver IF/Audio Board

Revision: Model Revision
4EL12B10 A

Symptoms: Discriminator reading drifts with changes in ambient temperature, making it difficult to "net" the radio system.

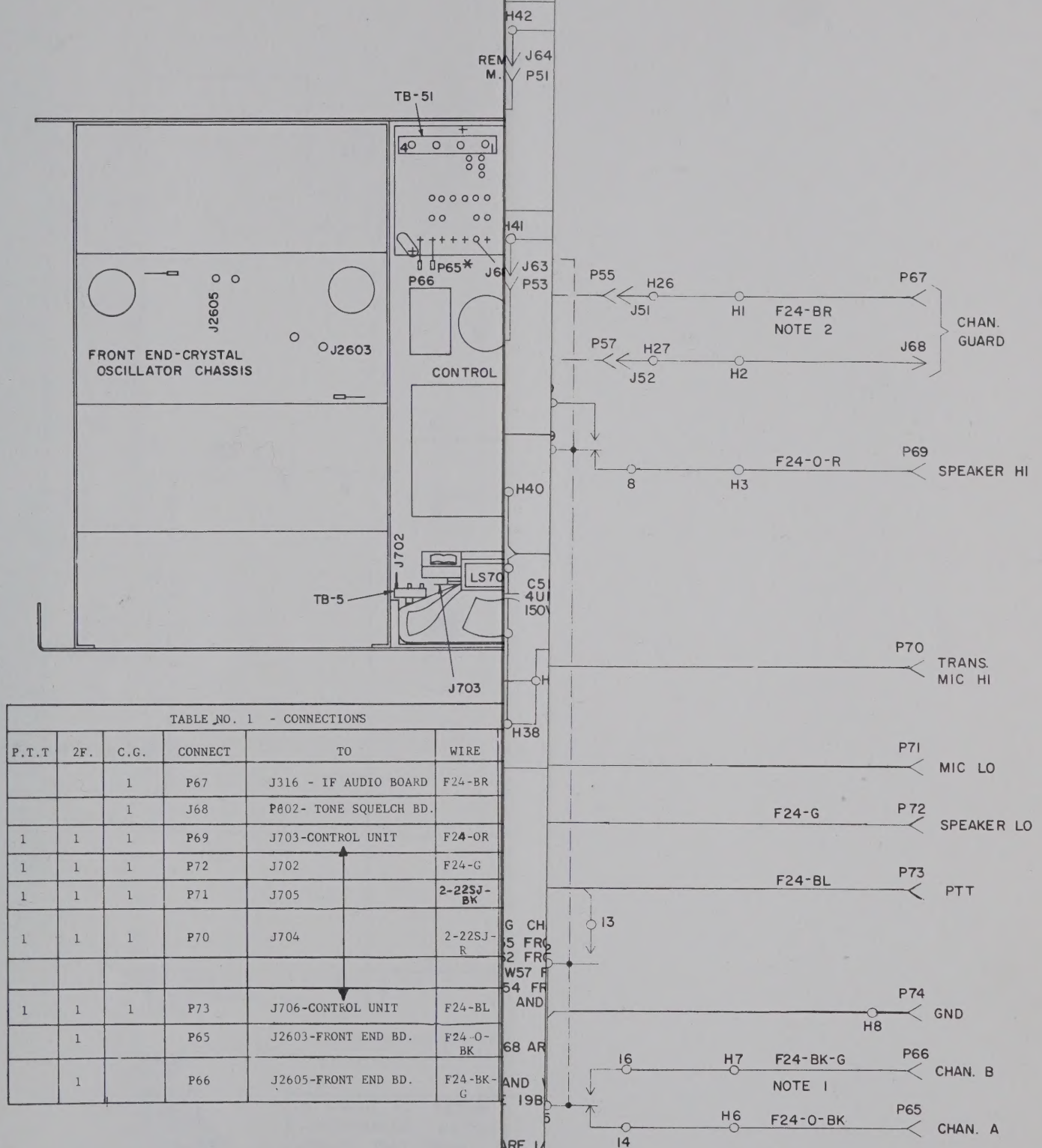
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Service Sheet

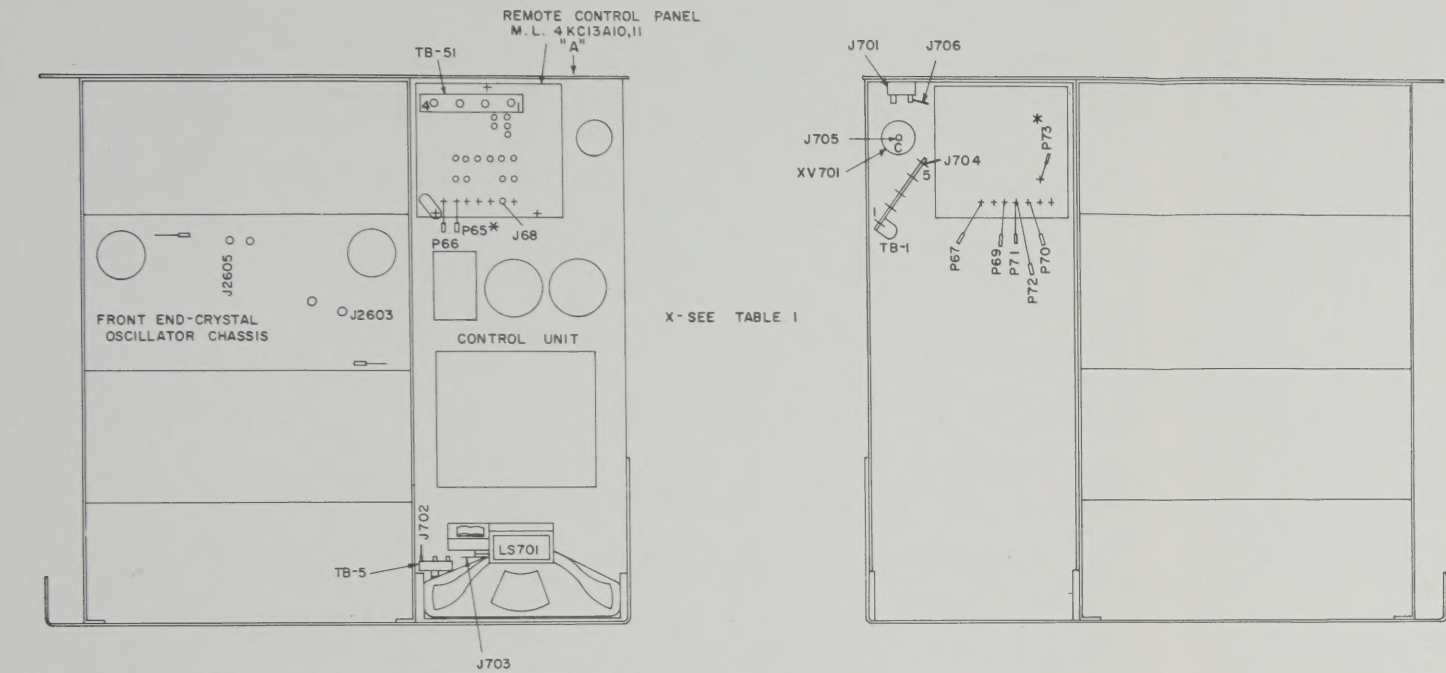
REMOTE ADAPTOR
MODEL 4KC13A10; REV. A
MODEL 4KC13A11

(RC-872)

Field Solution: Because of the time required to remove the cover from the discriminator transformer and mount the capacitors inside, capacitors have been selected which can be added outside the transformer, but still relieve discriminator drifting. These are not the same capacitors used in Revision A. To make the change in the field:

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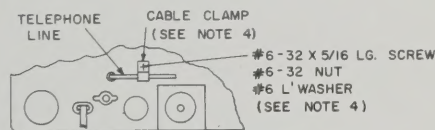


X-SEE TABLE 1

P.T.T.	2F.	C.G.	CONNECT	TO	WIRE	HOLE
		1	P67	J316 - IF AUDIO BOARD	F24-BR	H-50
		1	J68	P602- TONE SQUELCH BD.		
1	1	1	P69	J703-CONTROL UNIT	F24-OR	H50
1	1	1	P72	J702	F24-G	H50
1	1	1	P71	J705	2-225J-BK	
1	1	1	P70	J704	2-225J-R	
1	1	1	P73	J706-CONTROL UNIT	F24-BL	
	1		P65	J2603-FRONT END BD.	F24-O-BK	
	1		P66	J2605-FRONT END BD.	F24-BK-G	

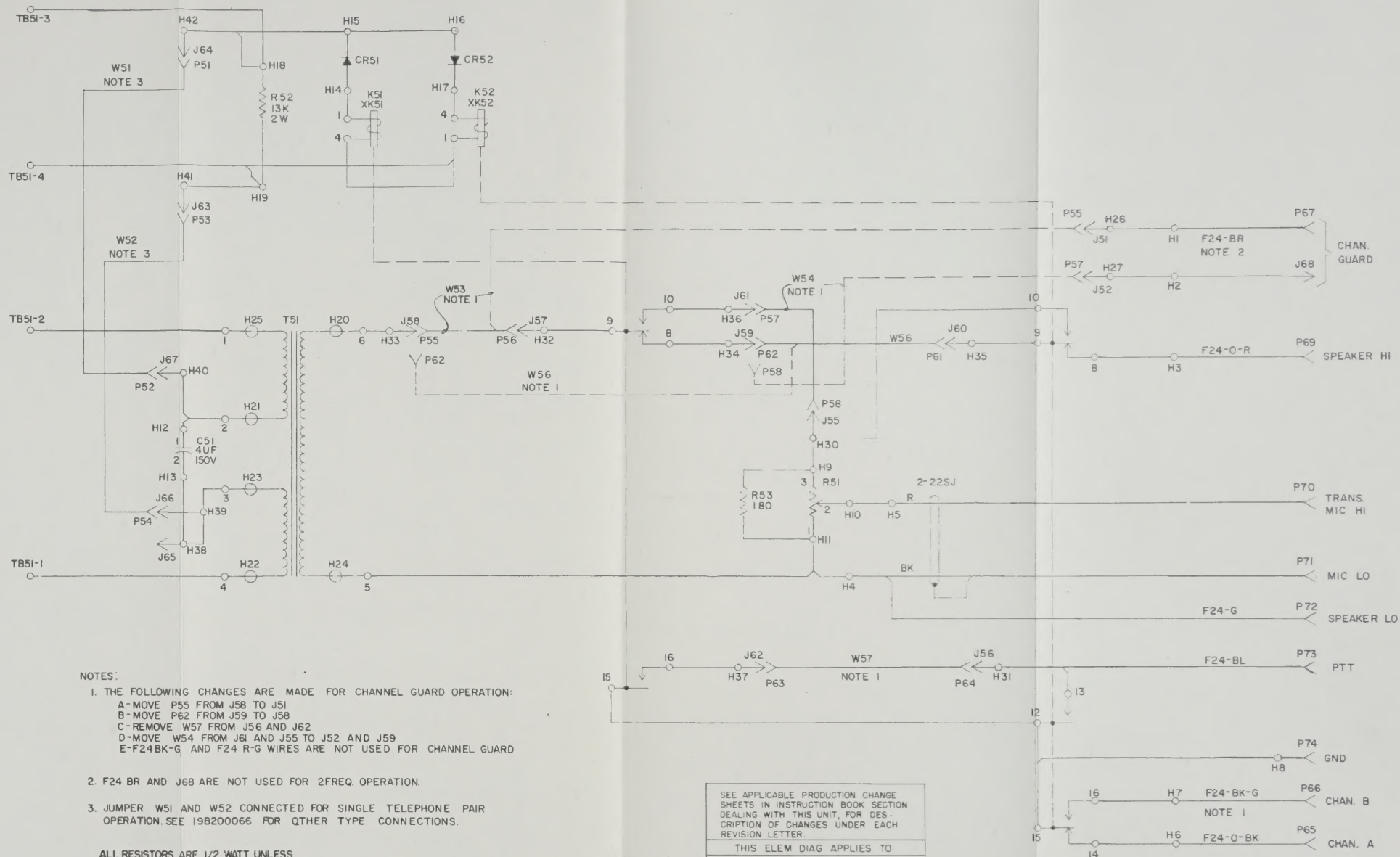
NOTES:

1. REMOVE PLATE AND INSTALL REMOTE CONTROL PANEL USING EXISTING HARDWARE.
2. MAKE INTERCONNECTIONS PER PROPER COLUMN OF TABLE 1. FOR 4KC13A11, CONNECT THE WIRES INDICATED IN THE COLUMN P.T.T. FOR 4KC13A10, CONNECT WIRES INDICATED IN COLUMN 2F. (2 FREQUENCY) OR C.G. (CHANNEL GUARD). DRESS WIRES THRU HOLES CALLED FOR IN TABLE 1.
3. TACK LACE WIRING TO EXISTING CABLING WHEREVER POSSIBLE.
4. THESE PARTS ARE FURNISHED WITH REMOTE CONTROL PANEL ML 4KC13A10 & 11.
5. SEE 19D400213 FOR JUMPER CHANGES WHEN 4KC13A10 ISSUED FOR C.G. SEE 19B200066 FOR PHONE LINE CONNECTIONS.
6. INSULATE ENDS OF WIRES AND TIE DOWN UNUSED WIRES.



VIEW AT "A"
ROTATE 180°

(C-5496993, Rev. 3)



NOTES:

1. THE FOLLOWING CHANGES ARE MADE FOR CHANNEL GUARD OPERATION:
A-MOVE P55 FROM J58 TO J51
B-MOVE P62 FROM J59 TO J58
C-REMOVE W57 FROM J56 AND J62
D-MOVE W54 FROM J61 AND J55 TO J52 AND J59
E-F24BK-G AND F24 R-G WIRES ARE NOT USED FOR CHANNEL GUARD

2. F24 BR AND J68 ARE NOT USED FOR 2FREQ. OPERATION.

3. JUMPER W51 AND W52 CONNECTED FOR SINGLE TELEPHONE PAIR OPERATION. SEE 19B200066 FOR OTHER TYPE CONNECTIONS.

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN MICROFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

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SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT. FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

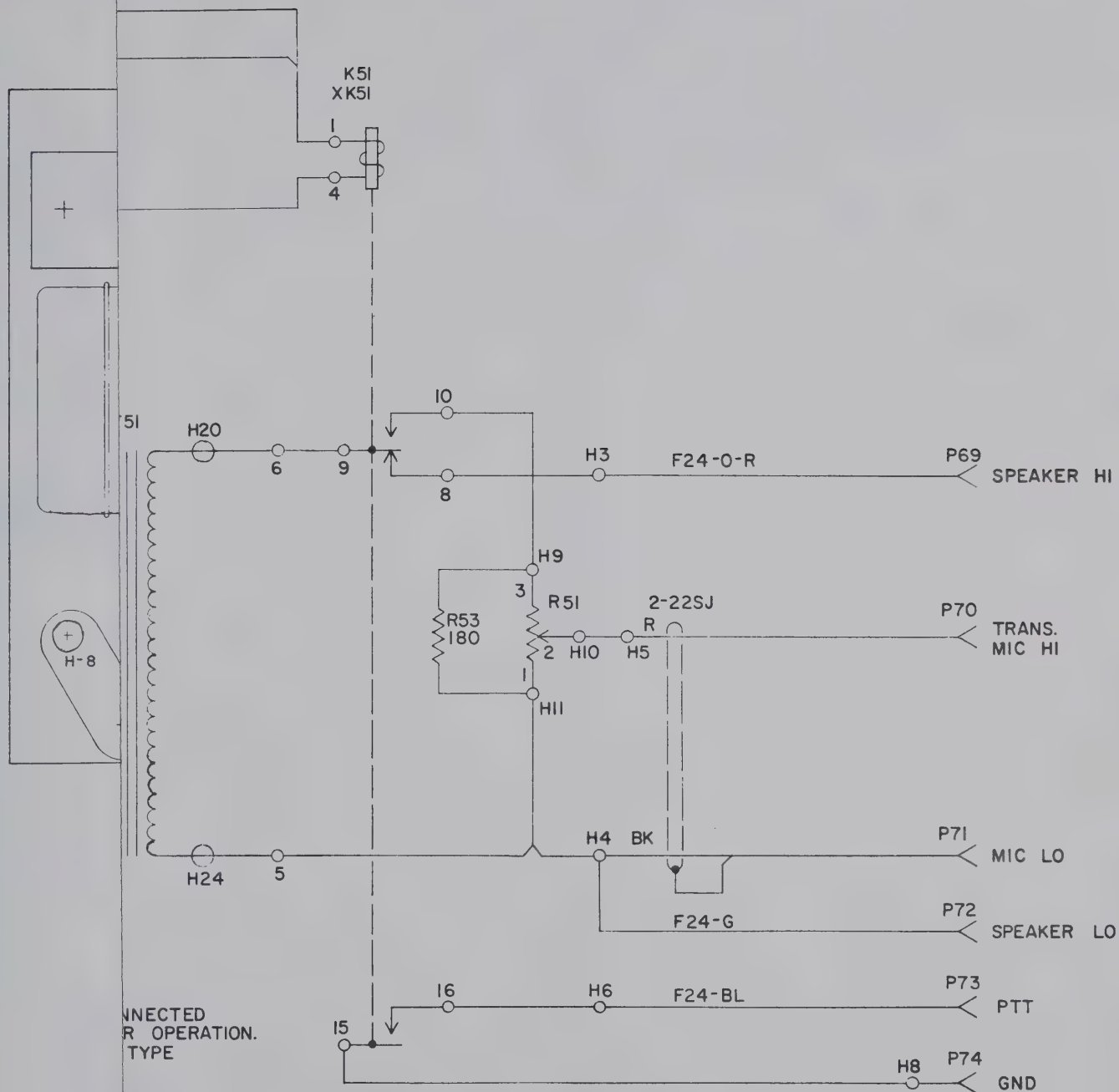
THIS ELEM DIAG APPLIES TO
MODEL NO 4KC13A10
REV LETTER A

(19D400213, Rev. 2)

Service Sheet

REMOTE ADAPTOR
MODEL 4KC13A10; REV. A
MODEL 4KC13A11

(RC-872)



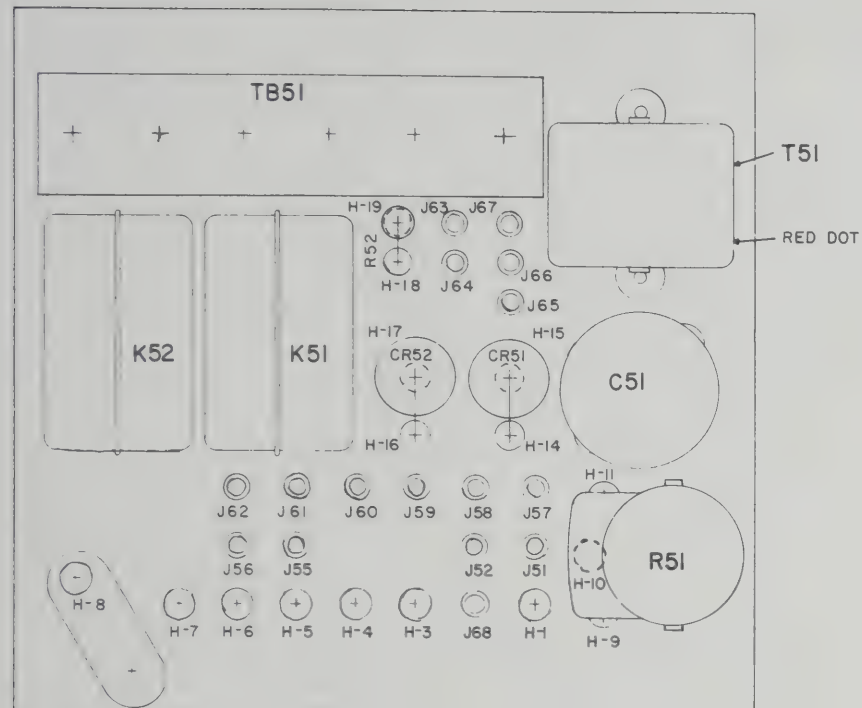
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(19C300794, Rev. 0)

Service Sheet

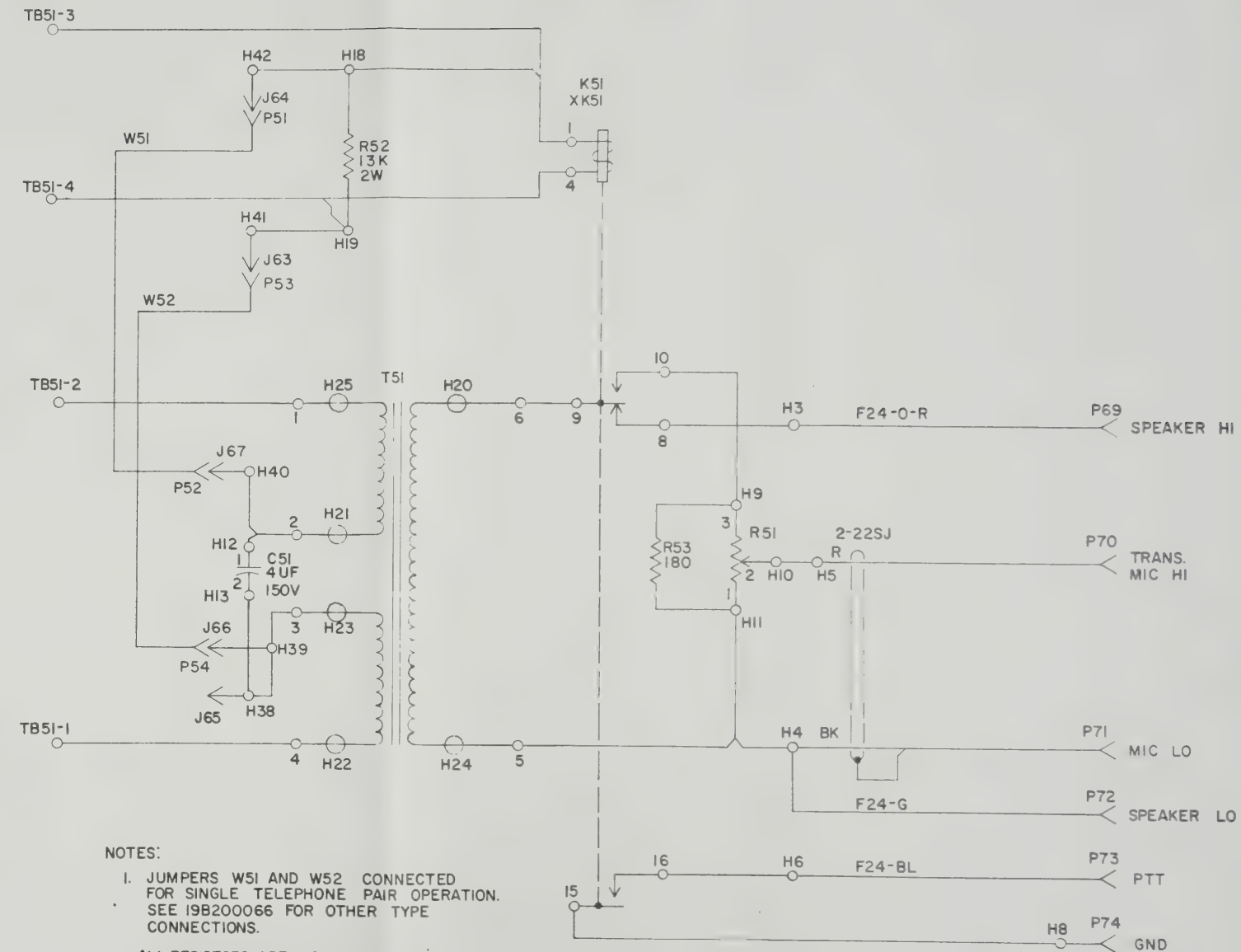
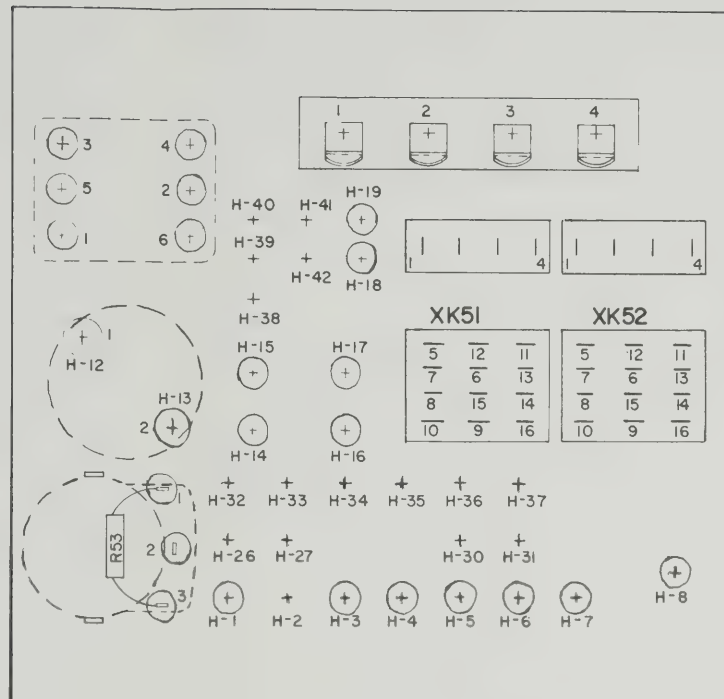
REMOTE ADAPTOR
MODEL 4KC13A10, 11

(RC-871)



REMOTE ADAPTOR BOARD
4KC13A10,11

(19C303159, Rev. 0)



NOTES:

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(19C300794, Rev. 0)

Service Sheet

REMOTE ADAPTOR
MODEL 4KC13A10, 11

(RC-871)



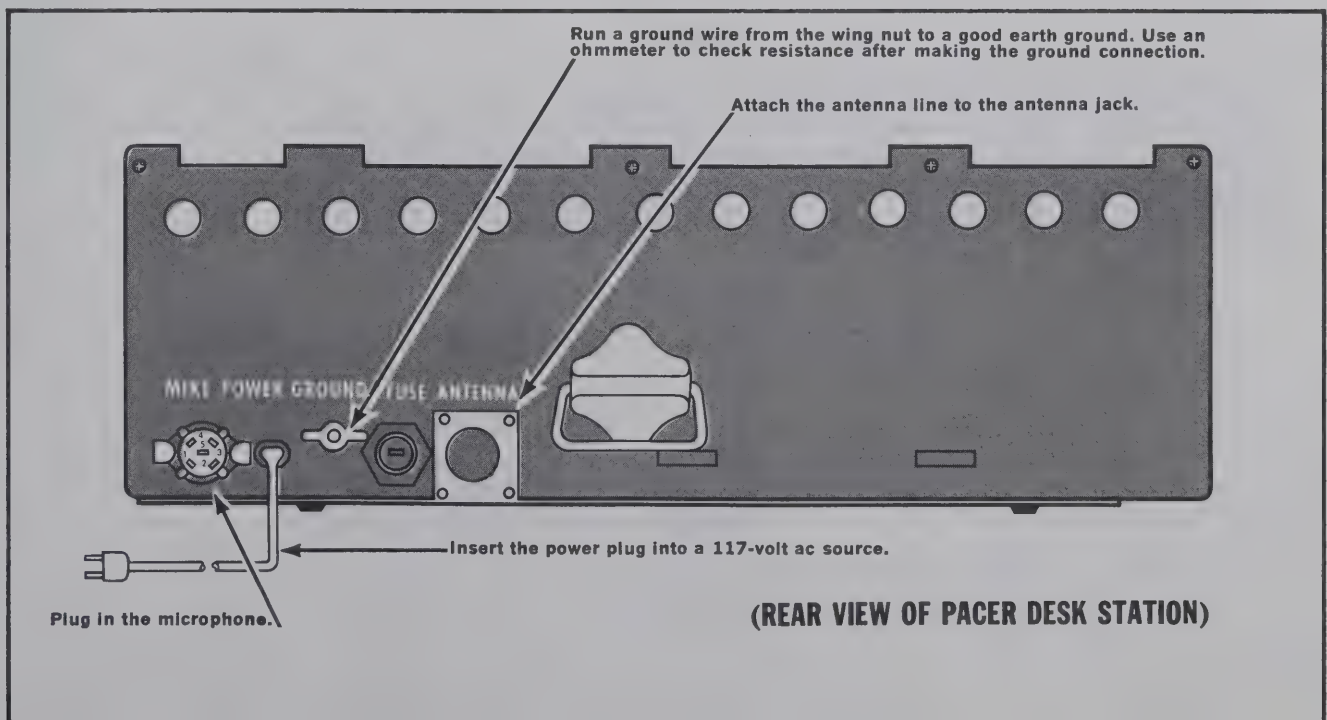
INSTALLATION

OF GENERAL ELECTRIC PACER DESK STATION



The General Electric Pacer Desk Station should be placed in a position close to the antenna transmission line and a source of line voltage. Mount the station on a shelf or desk so that the controls are within convenient reach of the dispatcher and the speaker can be easily heard.

Install the desk station as shown below:



MICROPHONE

The microphone supplied with the desk station should be placed within convenient reach of the dispatcher and connected to the microphone jack on the back of the desk station. If additional gain is required, 5 db can be obtained by removing one of the 22,000 ohm plate resistors (R709 and R711) which are hung in the wiring on the underside of the microphone preamplifier chassis.

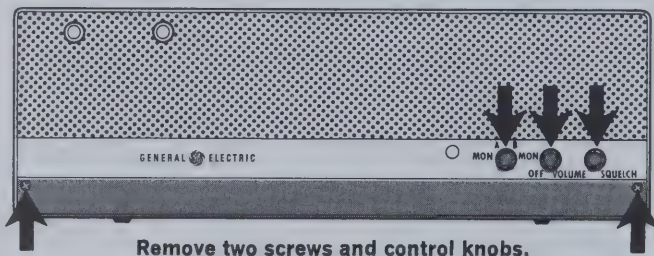
ANTENNA

Install the antenna according to the instructions shipped with it, keeping the transmission line as short as possible. After the antenna is installed, connect the transmission line to the antenna jack on the back of the desk station. The antenna must be installed in accordance with good engineering practice for satisfactory performance of the system.

DISASSEMBLY

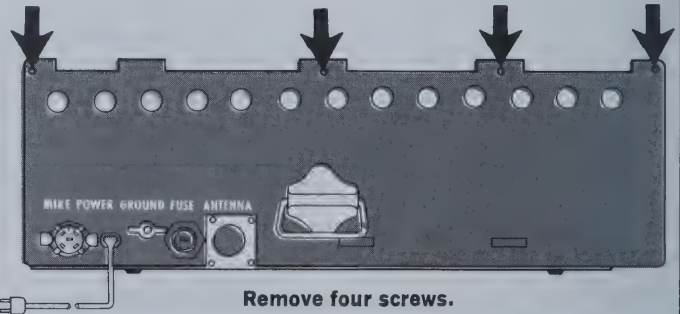
For servicing or alignment of the transmitter, receiver and power supply, remove the desk station chassis from the case as shown below:

FRONT



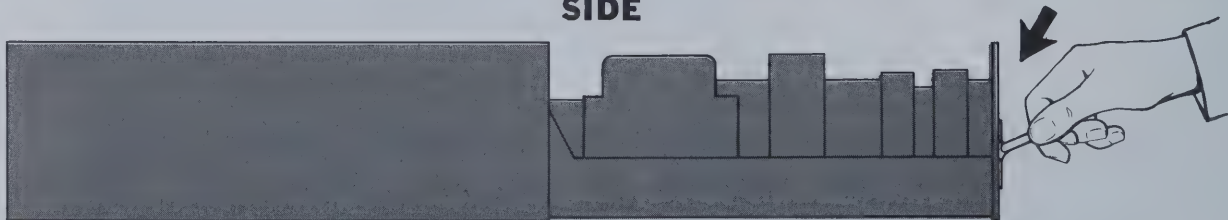
Remove two screws and control knobs.

REAR



Remove four screws.

SIDE

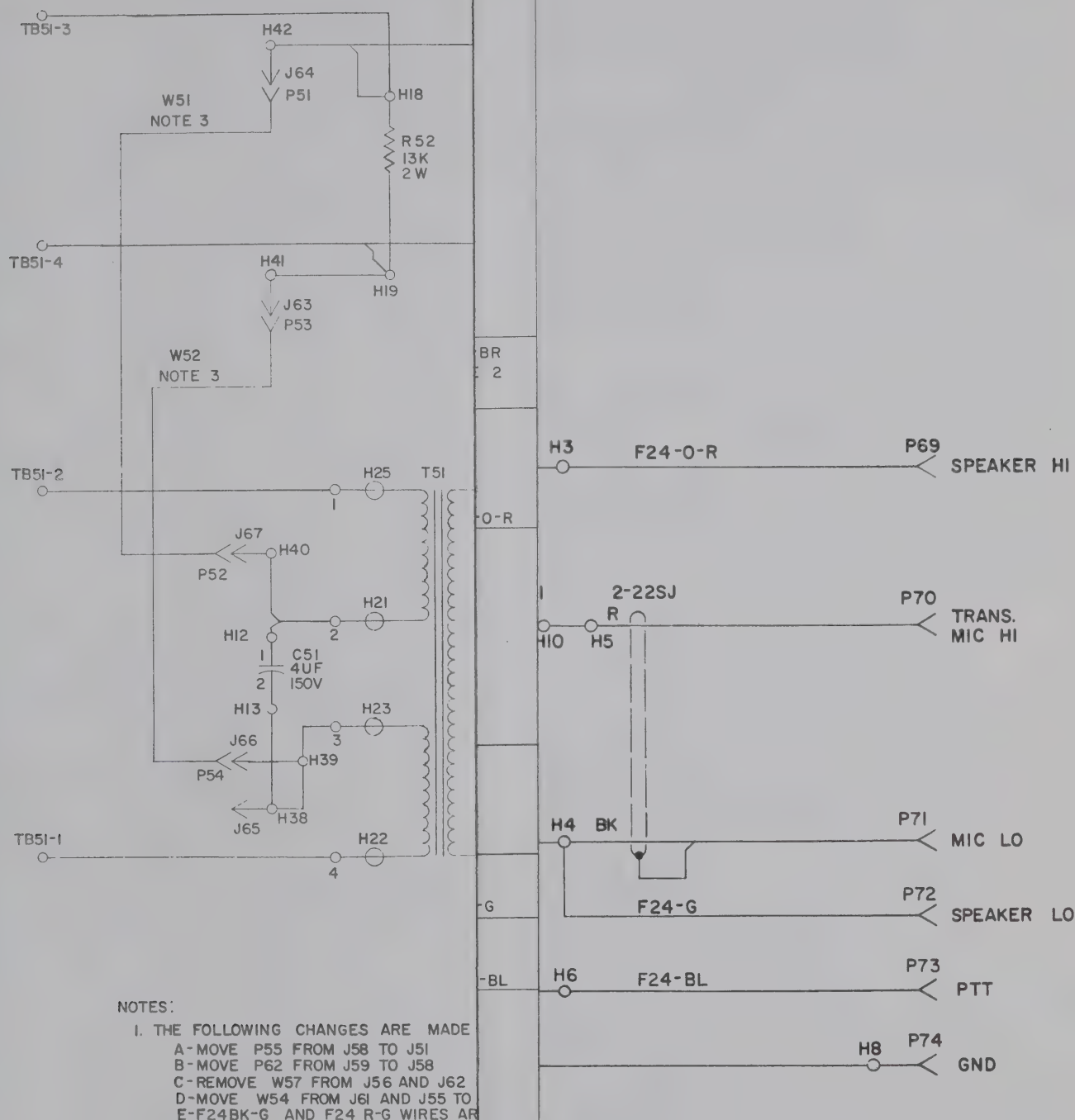


Grasp handle on chassis and pull chassis from case.

Refer to the Maintenance Manual for servicing and alignment procedures.

GENERAL  ELECTRIC

COMMUNICATION PRODUCTS DEPARTMENT LYNCHBURG, VIRGINIA
(In Canada, Canadian General Electric Company, Ltd., 830 Lansdowne Rd., Toronto, Ontario)



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DO NOT EQUIPMENT
 OF ANY
 DE ONLY WITH
 SPECIFICATIONS
 FOR THAT PART.

Elementary Diagrams

REMOTE ADAPTER
 MODEL 4KC13A10, REV.A
 MODEL 4KC13A11

(RC-871A)

MICROPHONE

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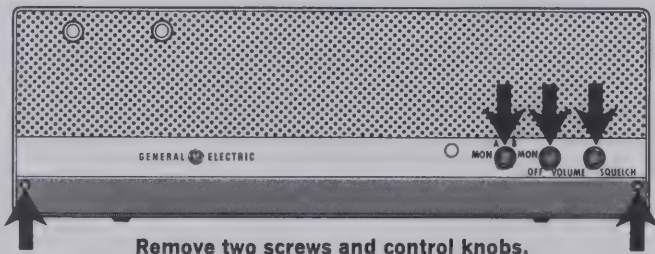
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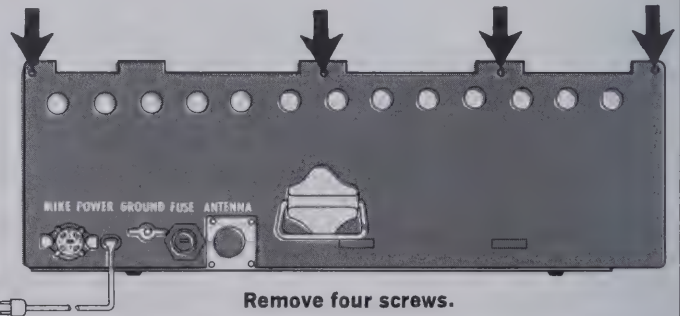
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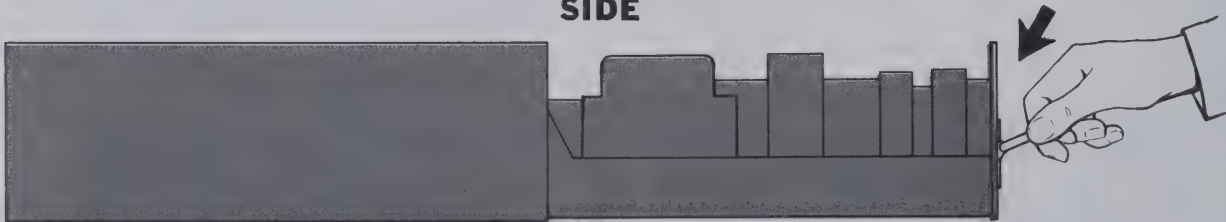
Remove two screws and control knobs.

REAR



Remove four screws.

SIDE



Grasp handle on chassis and pull chassis from case.

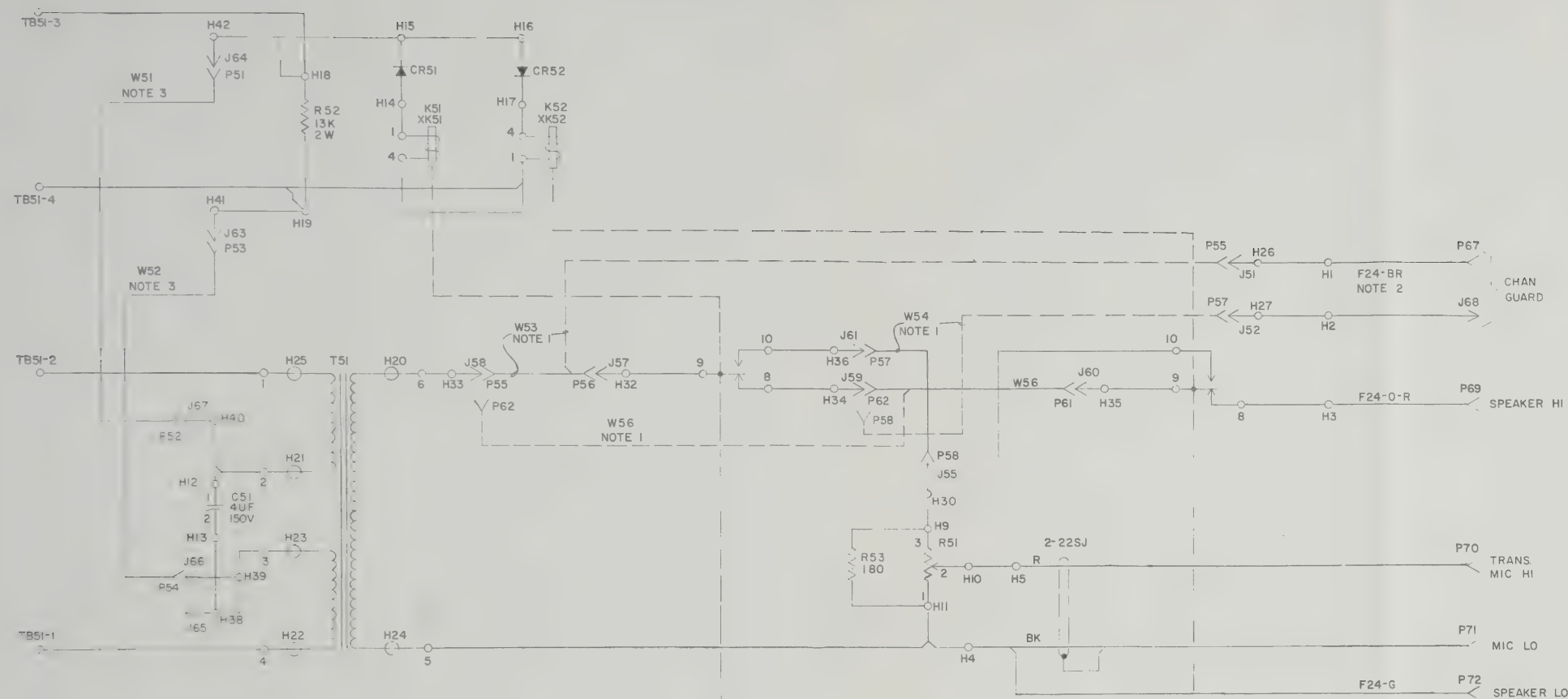
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GENERAL  ELECTRIC

COMMUNICATION PRODUCTS DEPARTMENT LYNCHBURG, VIRGINIA

(In Canada, Canadian General Electric Company, Ltd., 830 Lansdowne Rd., Toronto, Ontario)

MODEL 4KC13A10



- NOTES:
- THE FOLLOWING CHANGES ARE MADE FOR CHANNEL GUARD OPERATION:
 A-MOVE P55 FROM J58 TO J51
 B-MOVE P62 FROM J59 TO J58
 C-REMOVE W57 FROM J56 AND J62
 D-MOVE W54 FROM J61 AND J55 TO J52 AND J59
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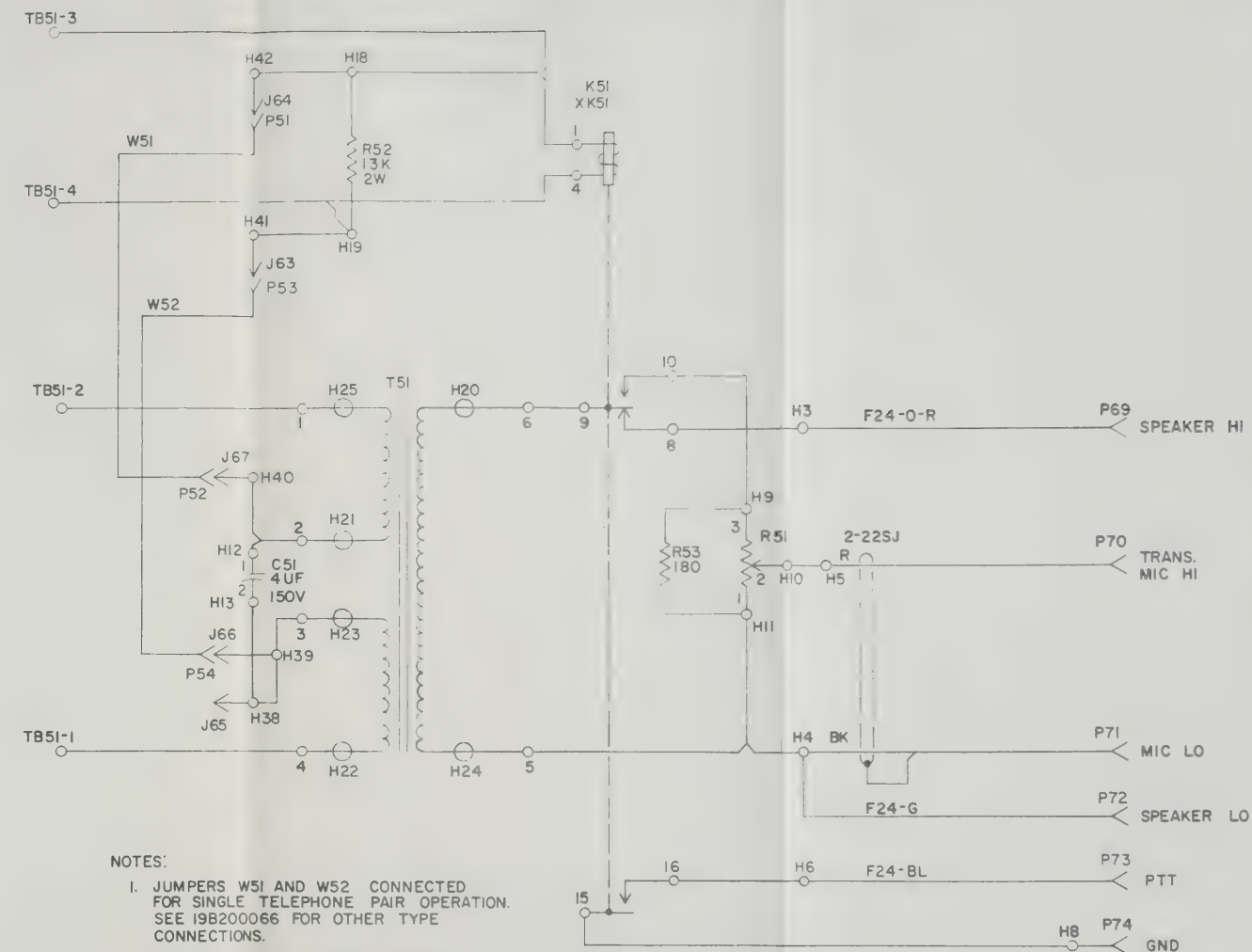
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SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO
 MODEL NO 4KC13A10
 REV LETTER A

MODEL 4KC13A11



- NOTES:
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Elementary Diagrams

REMOTE ADAPTER
 MODEL 4KC13A10, REV.A
 MODEL 4KC13A11

PARTS LIST

REMOTE ADAPTER BOARD
MODEL 4KC13A10, REV. A
MODEL 4KC13A11

PL-5496956-G1, 2

SYMBOL	G-E PART NO.	DESCRIPTION
		----- CAPACITORS -----
C51	7486445-P5	Electrolytic, non-polarized: 4 μ f +100% -10%, 150 VDCW.
		----- RECTIFIERS -----
CR51 and CR52	5490415-P2	Silicon: model 4KC13A10 only.
		----- RELAYS -----
K51	5491595-P32	120 VDC, 15,000 ohms; 5 form "C" contacts; sim to Allied T154.
K52	5491595-P32	120 VDC, 15,000 ohms; 4 form "C" contacts; sim to Allied T154. Model 4KC13A10 only.
		----- TERMINALS -----
P65 thru P67	4029840-P1	Taper pin connector; sim to Amp 41854 or Kent 123946. Model 4KC13A10 only.
P69 thru P73	4038634-P1	Receptacle, pin; phos bronze, tin plated; sim to Amp 42428-2.
		----- RESISTORS -----
R51	7491385-P11	Potentiometer, carbon film, 250 ohms, $\pm$ 20%, 0.15 w, linear taper, slotted shaft; sim to UPE-70.
R52	C-3R79-P133J	Fixed composition: 13,000 ohms $\pm$ 5%, 2 w.
R53	C-3R77-P181K	Fixed composition: 180 ohms $\pm$ 10%, 1/2 w.
		----- TRANSFORMERS -----
T51	19C300687-P1	Audio: epoxy-filled metal can; freq range 300 cps to 3000 cps. DC resistance: Terms 1-2: 15.5 ohms $\pm$ 10% Terms 3-4: 15.5 ohms $\pm$ 10% Terms 5-6: 6.5 ohms $\pm$ 10%
		----- CABLES -----
W51 and W52	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4, and 2 taper pin connectors, G-E Dwg. 4029840-P1.
W53 and W54	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
W56 and W57	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
		----- SOCKETS -----
XX51	5491595-P5	Relay; sim to Allied 30054-2.
XX51	5491595-P5	Relay; sim to Allied 30054-2. Model 4KC13A10 only.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

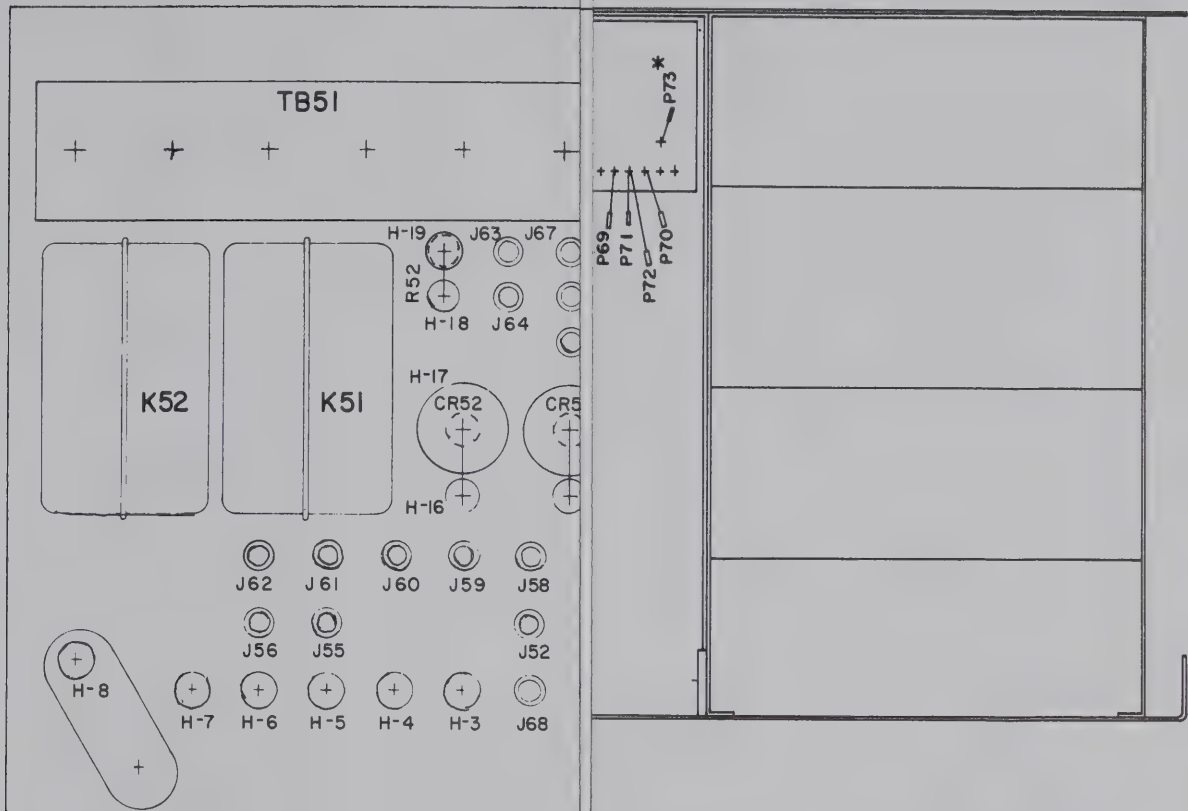
REMOTE ADAPTER BOARD
MODEL 4KC13A10, REV. A
MODEL 4KC13A11

PL-5496956-G1, 2

SYMBOL	G-E PART NO.	DESCRIPTION
-----CAPACITORS-----		
C51	7488443-P5	Electrolytic, non-polarized: 4 μ f +100% -10%, 150 VDC.
-----RECTIFIERS-----		
CR51 and CR52	5490415-P2	Silicon: model 4KC13A10 only.
-----RELAYS-----		
K51	5491595-P32	120 VDC, 15,000 ohms; 5 form "C" contacts; sim to Allied T154.
K52	5491595-P32	120 VDC, 15,000 ohms; 4 form "C" contacts; sim to Allied T154. Model 4KC13A10 only.
-----TERMINALS-----		
P85 thru P87	4029840-P1	Taper pin connector; sim to Amp 41854 or Kent 123948. Model 4KC13A10 only.
P89 thru P93	4036634-P1	Receptacle, pin; phos bronze, tin plated; sim to Amp 42428-2.
-----RESISTORS-----		
R51	7491365-P11	Potentiometer, carbon film, 250 ohms, $\pm$ 20%, 0.15 w, linear taper, slotted shaft; sim to UPE-70.
R52	C-3R79-P133J	Fixed composition: 13,000 ohms $\pm$ 5%, 2 w.
R53	C-3R77-P181K	Fixed composition: 180 ohms $\pm$ 10%, 1/2 w.
-----TRANSFORMERS-----		
T51	19C300687-P1	Audio: epoxy-filled metal can; freq range 300 cps to 3000 cps. DC resistance: Terms 1-2: 15.5 ohms $\pm$ 10% Terms 3-4: 15.5 ohms $\pm$ 10% Terms 5-6: 6.5 ohms $\pm$ 10%
-----CABLES-----		
W51 and W52	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4, and 2 taper pin connectors, G-E Dwg. 4029840-P1.
W53 and W54	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
W56 and W57	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
-----SOCKETS-----		
XK51	5491595-P5	Relay; sim to Allied 30054-2.
XK51	5491595-P5	Relay; sim to Allied 30054-2. Model 4KC13A10 only.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

TOP



The following items are in Model 4KC13A10 only:

CR51 Silicon Rectifier
and
CR52

K52 Relay

XK52 Relay Socket

3. TACK LACE WIRING TO EXISTING CABLING WHEREVER POSSIBLE.
4. THESE PARTS ARE FURNISHED WITH REMOTE CONTROL PANEL ML 4KC13A10 & 11.
5. SEE 19D400213 FOR JUMPER CHANGES WHEN 4KC13A10 ISSUED FOR C.G. SEE 19B200066 FOR PHONE LINE CONNECTIONS.
6. INSULATE ENDS OF WIRES AND TIE DOWN UNUSED WIRES.

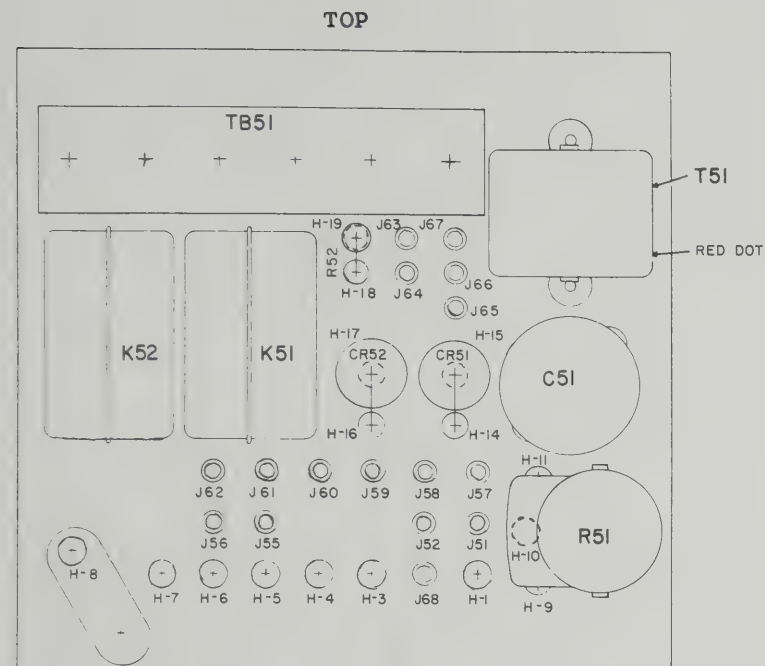
1/6 LG. SCREW

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(4)

Installation and Outline Diagrams

REMOTE ADAPTOR
MODEL 4KC13A10,11

(RC-872A)



The following items are used
in Model 4KC13A10 only:

CR51 Silicon Rectifier
and
CR52

K52 Relay

XK52 Relay Socket

REMOTE ADAPTOR BOARD
4KC13A10,11

(19C303159, Rev. 0)

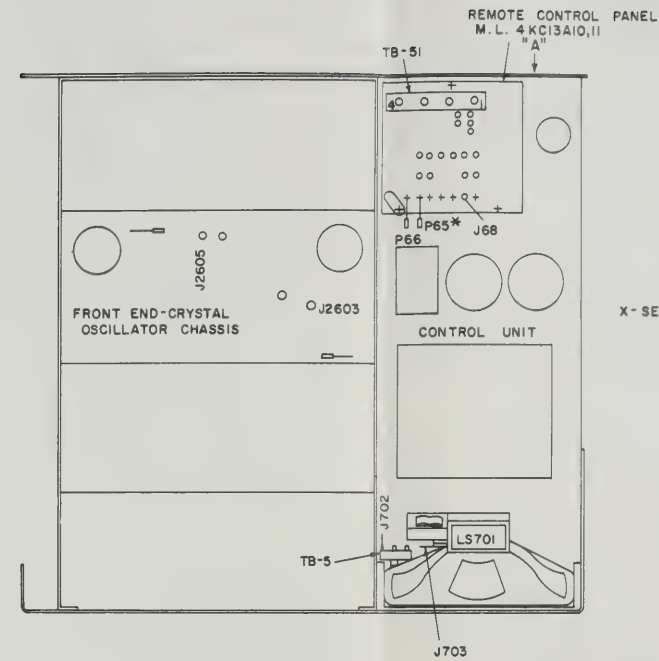
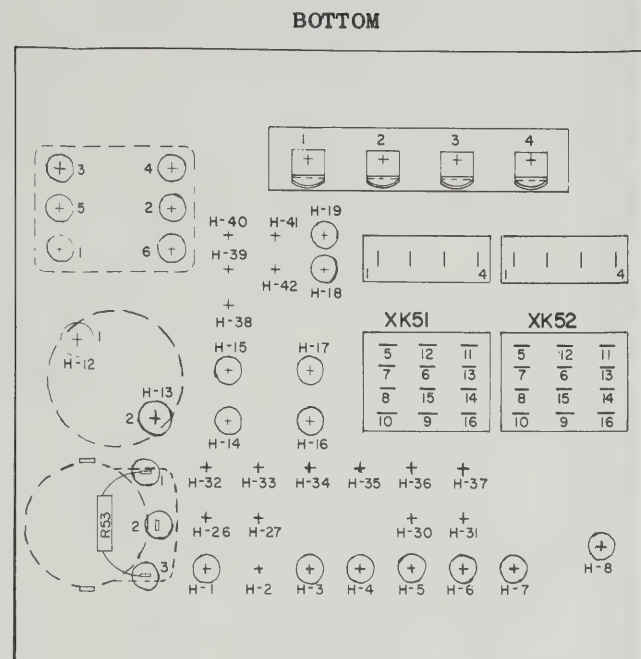
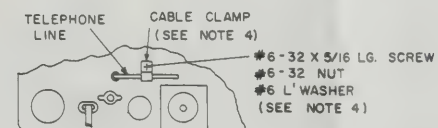


TABLE NO. 1 - CONNECTIONS						
P.T.T	2F.	C.G.	CONNECT	TO	WIRE	HOLD
		1	P67	J316 - IF AUDIO BOARD	F24-BR	H-50
		1	J68	P802- TONE SQUELCH BD.		
1	1	1	P69	J703-CONTROL UNIT	F24-OR	H50
1	1	1	P72	J702	F24-G	H50
1	1	1	P71	J705	2-22SJ-BK	
1	1	1	P70	J704	2-22SJ-R	
1	1	1	P73	J706-CONTROL UNIT	F24-BL	
	1		P65	J2603-FRONT END BD.	F24-O-BK	
	1		P66	J2605-FRONT END BD.	F24-BK-G	

NOTES :

- | | |
|--|--|
| 1. REMOVE PLATE AND INSTALL REMOTE CONTROL PANEL USING EXISTING HARDWARE. | 3. TACK LAZE WIRING TO EXISTING CABLING WHEREVER POSSIBLE. |
| 2. MAKE INTERCONNECTIONS PER PROPER COLUMN OF TABLE 1. FOR 4K13A11, CONNECT THE WIRES INDICATED IN THE COLUMN P.T.T. FOR 4K13A10, CONNECT WIRES INDICATED IN COLUMN 2F. (2 FREQUENCY) OR C.G. (CHANNEL GUARD). | 4. THESE PARTS ARE FURNISHED WITH REMOTE CONTROL PANEL ML 4K13A10 & 11. |
| DRESS WIRES THRU HOLES CALLED FOR IN TABLE 1. | 5. SEE 19D400213 FOR JUMPER CHANGES WHEN 4K13A10 ISSUED FOR C.G. SEE 19B200066 FOR PHONE LINE CONNECTIONS. |
| | 6. INSULATE ENDS OF WIRES AND TIE DOWN UNUSED WIRES. |



VIEW AT "A"
ROTATE 180°

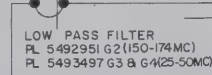
(C-5496993, Rev. 3)

Installation and Outline Diagrams

REMOTE ADAPTOR
MODEL 4KC13A10,11

(RC-872A)

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.



- NOTES:
1. J702 THRU J708 ARE 3/8 IN LONG PIGTAILS OF J404 BUS WIRE.
 2. WIRE MUST BE LONG ENOUGH TO REACH J651 OF TONE FILTER 4035070G, USED IN TONE SQUELCH OPTION.
 3. SHIELD CONNECTIONS OF W702, 703 AND 704 CONNECTIONS OF C705, 708, 709, 710, 711, 712 AND 713 AND A CONNECTIONS TO J701-1 AND J701-2 ARE TO BE KEPT AS SHORT AS POSSIBLE.
 4. PICK UP XV701-0
 5. ROUTE SINGLE WIRE AS SHOWN ON B5499910.

* ONLY ONE SWITCH PRESENT IN ANY UNIT.

(RC-855)

G-E PACER:
27—50 MC

BULLETIN NO: 9008-3

DATE: January 1963

DATAFILE BULLETIN

Purpose: DISCRIMINATOR TRANSFORMER IMPROVED

Equipment: IF/Audio Board for 27—50 MC G-E Pacer Receivers

Revision:	<u>Model Number</u>	<u>Revision</u>
	4EL12B10	C

Change: Revision C changed capacitors C1 and C3 in discriminator transformer T305 to bring the discriminator constants closer to design center.

<u>Symbol</u>	<u>Was</u>	<u>Changed To</u>
T305-C1 and T305-C3	Capacitor, fixed mica: 82 pf ±5%, 500 VDCW; sim to Electro- motive Mfg. DM15; G-E Part No. 7489162-P25.	Capacitor, fixed mica; 100 pf ±5%, 500 VDCW; Sim to Electromotive Mfg. DM15; G-E Part No. 7489162-P27.

19033

FEB. No: 257

PARTS LIST		
CONTROL UNIT POWER SUPPLY		
MODEL 4EC48A10		
PL-54989295-G1		
SYMBOL	G-E PART NO.	DESCRIPTION
CAPACITORS		
C101	7770894-P25	Dry electrolytic, twist-prong; 40-40 μ f +50% -10%, 450-450 VDCW; sim to Mallory PP.
C102	7476442-P13	Dry electrolytic, twist-prong; 60-60 500 μ f +100% -10% +250% -10%, 250-250 25 VDCW.
C103	5494481-P17	Fixed ceramic disc; 4000 pf $\pm$ 20%, 500 VDCW; sim to RMC JF.
C104	7774750-P15	Fixed ceramic disc; .02 μ f +100% -0%, 500 VDCW.
C105	7488162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C106	7491930-P10	Mylar [®] , tubular; 0.22 μ f $\pm$ 20%, 100 VDCW; sim to Good-Ail 663-DW.
C107	7774786-P40	Electrolytic; 5 μ f +50% -10%, 450 VDCW; sim to Mallory TC70.
C108 thru C109	7489162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C110	7489162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
RECTIFIERS		
C111	5490415-P2	Silicon.
INDICATING DEVICES		
C112		Incandescent; Min. bay. base, 14.5 v, 0.12 amps. G-E Type 53.
FUSES		
F101	1816-P5	Quick blowing; 2 amps, 250 v; sim to Littell-fuse 312.002 or Bussmann AGC-2.
F102	1816-P12	Quick blowing; 1/8 amps, 250 v; sim to Littell-fuse 312.125 or Bussmann AGC-1 B.
F103	1816-P11	Quick blowing; 1/16 amps, 250 v; sim to Littell-fuse 312.062 or Bussmann MB-1 B.
JACKS AND RECEPTACLES		
J101	5493018-P1	Connector; 5 contacts, phenolic; sim to Cinch 203-31-05-005.
J102 thru J103		3 B in. of .04 buss wire.
RELAYS		
R101	5491595-P26	12 VDC, 185 ohms, 4 form C contacts; sim to Allied T154-CC-CC.
INDUCTORS		
L101	7489398-P1	Reactor; 1.5 h., .085 amps DC, DC res 150 ohms max.
LOUDSPEAKERS		
L102	5496301-P5	Speaker and Transformer Assn. Includes the following: Speaker 3 x 5 in., voice coil imp 3.2 ohms $\pm$ 10%, 2 w.
	5492498-P2	Transformer, audio; Pri: 5800 ohms imp $\pm$ 10% at 1.5 v, Sec 1: 3.2 ohms imp $\pm$ 10% at 1.5 v.

SYMBOL	G-E PART NO.	DESCRIPTION
PLUGS		
P101		(Included in W701).
P102		(Included in W702).
P103 thru P108	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P109		(Included in W703).
P110 thru P115	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P116		(Included in W704).
P117 thru P123	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P123	4036634-P1	Receptacle, pin; Phos bronze, tin plated; sim to Amp 42428-2.
RESISTORS		
R101	3R79-P100K	Fixed composition; 10 ohms $\pm$ 10%, 2 w.
R102	3R78-P101K	Fixed composition; 100 ohms $\pm$ 10%, 1 w.
R103	3R78-P222K	Fixed composition; 2200 ohms $\pm$ 10%, 1 w.
R104	7478711-P21	Wirewound; 100 ohms $\pm$ 5%, 5 w; sim to Sprague SKT.
R105	3R79-P104K	Fixed composition; 0.10 megohms $\pm$ 10%, 2 w.
R106	5493662-P4	Potentiometer, carbon film; 500,000 ohms $\pm$ 20%, 0.125 w, mod log taper; sim to CTS Series 45.
R107	5493662-P3	Potentiometer, carbon film; 500,000 ohms $\pm$ 20%, 0.25 w, linear taper; sim to CTS Series 45.
R108	3R77-P393K	Fixed composition; 39,000 ohms $\pm$ 10%, 1/2 w.
R109	3R77-P223K	Fixed composition; 22,000 ohms $\pm$ 10%, 1/2 w.
R110	3R77-P274K	Fixed composition; 0.27 megohms $\pm$ 10%, 1 2 w.
R111	3R77-P223K	Fixed composition; 22,000 ohms $\pm$ 10%, 1 2 w.
R112	3R77-P122K	Fixed composition; 1,200 ohms $\pm$ 10%, 1 2 w.
R113	3R79-P390K	Fixed composition; 39 ohms $\pm$ 10%, 2 w.
SWITCHES		
S101		(Included in R706).
TRANSFORMERS		
T101	19C300671-P1	Power, filament, rectifier, single phase; Pri: 117 v, 30/60 cycles, Sec 1: 150 v, Sec 2: 300 v.
TUBES		
V101		Type 6C4.
CABLES		
W101	4036441-P8	Flameless cord let; Includes 8 ft cable, molded plastic plug on one end.
W102	5491689-P18	Cable assn; Includes 6 in. $\pm$ 12 RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W103	5491689-P24	Cable assn; Includes 16 in. $\pm$ 12 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W104	5491689-P17	Cable assn; Includes 10 in $\pm$ 0.125 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
SOCKETS		
XD8701	4032220-P3	Lamp; Min. bay. base, 9 and 15-in. leads; sim to Drake NS17.
XD8702	4032220-P4	Lamp; Min. bay. base, 13.5-in. leads; sim to Drake NS17.
XF701	7115179-P1	Holder, Fuse; (3AG), 15 amps, 250 v; sim to Bussmann RKP.
XF702	4037310-P1	Holder, Fuse; Used with 1.25 x 0.25 fuse, 15 amp at 125 vac or DC; sim to Connector Corp P2R.
XX701	5491595-P5	Relay; Nylon, 16-contacts; sim to Allied 30054-2.
XY701	7768887-P9	Tube; 7 pin min, mica-filled phenolic; sim to Elco 235 PH-3702.

SYMBOL	G-E PART NO.	DESCRIPTION
LOW-PASS FILTER		
		PL-5492951-G2
CAPACITORS		
C2151 and C2152	7489162-P5	Fixed silver mica, dipped phenolic insulation; 8 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2153	7489162-P13	Fixed silver mica, dipped phenolic insulation; 27 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2154	7489162-P9	Fixed silver mica, dipped phenolic insulation; 18 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
JACKS AND RECEPTACLES		
J2151	7104941-P4	Phono-type; mica-filled phenolic or ceramic and XXSP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 vrms, 500 VDC; sim to Cinch 14H12699.
J2153	M2R22-P3	Connector, receptacle, panel; mica-filled; sim to Amphenol 83-1R or Signal Corps SO-239.
INDUCTORS		
		Coils: 2-1/4 turns, close wound.
L2151 and L2152	4034548-P1	
LOW-PASS FILTER		
		PL-5493497-G3 & G4
CAPACITORS		
C2152	7489162-P19	Fixed silver mica, dipped phenolic insulation; 47 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2153	7489162-P25	Fixed silver mica, dipped phenolic insulation; 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2154	7489162-P21	Fixed silver mica, dipped phenolic insulation; 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2155	7489162-P21	Fixed silver mica, dipped phenolic insulation; 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2156	7489162-P27	Fixed silver mica, dipped phenolic insulation; 100 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2157	7489162-P25	Fixed silver mica, dipped phenolic insulation; 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
JACKS AND RECEPTACLES		
J2151	7104941-P4	Jack; phono-type; mica-filled phenolic or ceramic and XXSP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 vrms, 500 VDC; sim to Cinch 14H12699.
J2153	M2R22-P3	Connector, receptacle, panel; mica-filled; sim to Amphenol 83-1R or Signal Corps SO-239.
INDUCTORS		
L2153 and L2154	4035215-P1	Coils: 4-1/2 turns, left-hand close wound. (Used in Group 3 only)
L2155 and L2156	4035216-P1	Coils: 5-1/2 turns, left-hand close wound. (Used in Group 4 only)

SYMBOL	G-E PART NO.	DESCRIPTION
REMOTE ADAPTER BOARD		
MODELS 4KC13A10, 11		
PL-5496956-G1, 2		
CAPACITORS		
C31	7486445-P5	Electrolytic, non-polarized; 4 pf +100% -10%, 150 VDCW.
RECTIFIERS		
CR51 and CR52	5490415-P2	Silicon; model 4KC13A10 only.
RELAYS		
K51	5491595-P32	120 VDC, 15,000 ohms, 5 form "C" contacts; sim to Allied T154.
K52	5491595-P32	120 VDC, 15,000 ohms; 4 form "C" contacts; sim to Allied T154. Model 4KC13A10 only.
TERMINALS		
P45 thru P47	4029840-P1	Taper pin connector; sim to Amp 41854 or Kent 123946. Model 4KC13A10 only.
P69 thru P7	4036634-P1	Receptacle, pin; phos bronze, tin plated; sim to Amp 42428-2.
RESISTORS		
R51	7491365-P11	Potentiometer, carbon film, 500 ohms $\pm$ 20%, 0.15 w, linear taper, slotted shaft; sim to UPE-70.
R52	C-3R79-P133J	Fixed composition; 13,000 ohms $\pm$ 5%, 2 w.
R53	C-3R77-P181K	Fixed composition; 180 ohms $\pm$ 10%, 1/2 w.
TRANSFORMERS		
T51	19C300687-P1	Audio; epoxy-filled metal can, freq range 300 cps to 3000 cps. DC resistance: Term 1-2 15.5 ohms $\pm$ 10% Term 3-4 15.5 ohms $\pm$ 10% Term 5-6 6.5 ohms $\pm$ 10%
CABLES		
W51 and W52	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4, and 2 taper pin connectors, G-E Dwg. 4029840-P1.
W53 and W54	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
W56 and W57	4037741-G1	Jumper - consisting of 2.20 in. wire; G-E Dwg. 7142367-P4 and 2 taper pin connectors; G-E Dwg. 4029840-P1. Model 4KC13A10 only.
SOCKETS		
XX51	5491595-P5	Relay; sim to Allied 30054-2.
XX51	5491595-P5	Relay; sim to Allied 30054-2. Model 4KC13A10 only.

SYMBOL	G-E PART NO.	DESCRIPTION
MODIFICATION KIT		
PL-4037104-G1 thru G3		
SUB-ASSEMBLIES		
Switch Assn; Includes the following		
JACKS AND RECEPTACLES		
J1	4033513-P4	Pin; contact Brass, cad plated; sim to Bead Chain L93-3. Used in G2 and G3 only.
PLUGS		
P1 and P2	4029840-P1	Terminal; taper pin connector; sim to Amp 41854 or Kent 123946. Used in G2 and G3 only.
P3 thru P5	4029840-P1	Terminal; taper pin connector; sim to Amp 41854 or Kent 123946. Used in G1 and G3 only.
SWITCHES		
S1	19B200194-P1	Rotary; melamine, non-shorting, 36 $^{\circ}$ indexing, 1 pole, 2 position, 10 milliamperes at 115 VDC, 1 amp at 28 VDC; sim to Grayhill Series 5000 Used in G1 and G2 only.
S2	5495227-P12	Rotary; phenolic, shorting contacts, 1 section 2 pole, 4 position, 3 amps at 25 VDC, 1 amp at 110 VDC; sim to Pals P. Used in G3 only.
MISCELLANEOUS		
	5495256-P1	Knob; butyrate, red - orange, for flattened shaft Eastman Cat. 32599.

PARTS LIST		
CONTROL UNIT POWER SUPPLY		
MODEL 4EC48A10		
PL-5499295-G1		
SYMBOL	G-E PART NO.	DESCRIPTION
CAPACITORS		
C704	7770994-P25	Dry electrolytic, twist-prong; 40-40 μ f +50% -10%, 450-450 VDCW; sim to Mallory PP.
C705	7476442-P13	Dry electrolytic, twist-prong; 60-60 500 μ f +100% -10% +250% -10%, 250-250 25 VDCW.
C809	5494481-P17	Fixed ceramic disc; 4000 pf $\pm$ 20%, 500 VDCW; sim to RMC JF.
C814	7774750-P15	Fixed ceramic disc; .02 μ f +100% -0%, 500 VDCW.
C815	7489162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C816	7491930-P10	Nylart, tubular; 0.22 μ f $\pm$ 20%, 100 VDCW; sim to Good-All 663-UW.
C817	7774786-P40	Electrolytic; 5 μ f +50% -10%, 450 VDCW; sim to Mallory TC70.
C818	7489162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C819	7489162-P106	Fixed mica; 10 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C820	7489162-P139	Fixed mica; 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
RECTIFIERS		
C821	5490415-P2	501169N.
INDICATING DEVICES		
C822	5490415-P2	Incandescent; Min. bay. base, 14.5 v, 0.12 amps; G-E Type 53.
FUSES		
F701	1816-P5	Quick blowing; 2 amps, 250 v; sim to Littell-Fuse 312.002 or Bussmann AGC-2.
F702	1816-P12	Quick blowing; 1/8 amps, 250 v; sim to Littell-Fuse 312.125 or Bussmann AGC-1 8.
F703	1816-P11	Quick blowing; 1/16 amps, 250 v; sim to Littell-Fuse 312.052 or Bussmann MBW-1 16.
JACKS AND RECEPTACLES		
J201	5493018-P1	Connector; 5 contacts, phenolic; sim to Cinch 203-31-05-005.
J202	5493018-P1	3/8 in. of .04 buss wire.
RELAYS		
R701	5491595-P26	12 VDC, 185 ohms, 4 form C contacts; sim to Allied T154-CC-CC.
INDUCTORS		
L204	7489398-P1	Reactor; 1.5 h, .085 amps DC, DC res 150 ohms max.
LOUDSPEAKERS		
L301	5496301-P5	Speaker and Transformer Assn. Includes the following: Speaker 3 x 5 in., voice coil imp 3.2 ohms $\pm$ 10%, 2 w. Transformer, audio. Pri: 5800 ohms imp $\pm$ 10% at 1.5 w, Sec 1: 3.2 ohms imp $\pm$ 10% at 1.5 w.

SYMBOL	G-E PART NO	DESCRIPTION
PLUGS		
P501		(Included in W701).
P502		(Included in W702).
P703	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P708		(Included in W703).
P710	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P713		(Included in W704).
P717	4029840-P1	Terminal; Taper pin connector; sim to Amp 41854 or Kent 123946.
P722		(Included in W704).
P723	4036634-P1	Receptacle, pin; Phos bronze, tin plated; sim to Amp 42428-2.
RESISTORS		
R701	3879-P100X	Fixed composition; 10 ohms $\pm$ 10%, 2 w.
R702	3878-P101K	Fixed composition; 100 ohms $\pm$ 10%, 1 w.
R703	3878-P222K	Fixed composition; 2200 ohms $\pm$ 10%, 1 w.
R704	7478711-P21	Wirewound; 100 ohms $\pm$ 5%, 5 w; sim to Sprague 5KT.
R705	3879-P104X	Fixed composition; 0.10 megohm $\pm$ 10%, 2 w.
R706	5493662-P4	Potentiometer, carbon film; 500,000 ohms $\pm$ 20%, 0.125 w, mod log taper; sim to CTS Series 45.
R707	5493662-P3	Potentiometer, carbon film; 500,000 ohms $\pm$ 20%, 0.25 w, linear taper; sim to CTS Series 45.
R708	3877-P293X	Fixed composition; 39,000 ohms $\pm$ 10%, 1/2 w.
R709	3877-P223X	Fixed composition; 22,000 ohms $\pm$ 10%, 1/2 w.
R710	3877-P274K	Fixed composition; 0.27 megohm $\pm$ 10%, 1/2 w.
R711	3877-P223K	Fixed composition; 22,000 ohms $\pm$ 10%, 1/2 w.
R712	3877-P132K	Fixed composition; 1,200 ohms $\pm$ 10%, 1/2 w.
R713	3879-P390X	Fixed composition; 39 ohms $\pm$ 10%, 2 w.
SWITCHES		
S701		(Included in R706).
TRANSFORMERS		
T701	19C300671-P1	Power, filament, rectifier, single phase: Pri: 117 v, 50/60 cycles, Sec 1: 150 v, Sec 2: 300 v.
TUBES		
T701		Type 6C4.
CABLES		
W701	4036441-P8	Flamencol cord let; Includes 8 ft cable, molded plastic plug on one end.
W702	5491689-P18	Cable assn; Includes 6 in. $\pm$.12 RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W703	5491689-P24	Cable assn; Includes 16 in. $\pm$.12 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W704	5491689-P17	Cable assn; Includes 10 in $\pm$ 0.125 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
SOCKETS		
XD5701	4032220-P3	Lamp; Min. bay. base, 9 and 15-in. leads; sim to Drake N517.
XD5702	1092220-P4	Lamp; Min. bay. base, 19.5-in. leads; sim to Drake N517.
XF701	7115179-P1	Holder, Fuse; (3AG), 15 amps, 250 v; sim to Bussmann HKP.
XF702	4037310-P1	Holder, Fuse; Used with 1.25 x 0.25 fuse, 15 amp at 125 vac or DC; sim to Connector Corp F2R.
XT701	5491595-P5	Relay; Nylon, 16-contacts; sim to Allied 30054-2.
XV701	7768887-P9	Tube; 7 pin min, mica-filled phenolic; sim to Zlec 239 PW-3702.

SYMBOL	G-E PART NO	DESCRIPTION
LOW-PASS FILTER		
		PL-5492951-G2
CAPACITORS		
C2151	7489162-P5	Fixed silver mica, dipped phenolic insulation; 9 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2152		
C2153	7489162-P13	Fixed silver mica, dipped phenolic insulation; 27 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2154	7489162-P9	Fixed silver mica, dipped phenolic insulation; 18 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
JACKS AND RECEPTACLES		
J2151	7104941-P4	Phono-type; mica-filled phenolic or ceramic and XXCP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 vrms, 500 VDC; sim to Cinch 14M12699.
J2153	M2R22-P3	Connector, receptacle, panel; mica-filled; sim to Amphenol 83-1R or Signal Corps 30-239.
INDUCTORS		
L2151	4035458-P1	Coils; 2-1/4 turns, close wound.
L2152		
L2153		
LOW-PASS FILTER		
		PL-5493497-G3 & G4
CAPACITORS		
C2152	7489162-P19	Fixed silver mica, dipped phenolic insulation; 47 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2153	7489162-P25	Fixed silver mica, dipped phenolic insulation; 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2154	7489162-P21	Fixed silver mica, dipped phenolic insulation; 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2155	7489162-P21	Fixed silver mica, dipped phenolic insulation; 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2156	7489162-P27	Fixed silver mica, dipped phenolic insulation; 100 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2157	7489162-P25	Fixed silver mica, dipped phenolic insulation; 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
JACKS AND RECEPTACLES		
J2151	7104941-P4	Jack; phono-type; mica-filled phenolic or ceramic and XXCP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 vrms, 500 VDC; sim to Cinch 14M12699.
J2153	M2R22-P3	Connector, receptacle, panel; mica-filled; sim to Amphenol 83-1R or Signal Corps 30-239.
L2153	4035215-P1	Coils; 4-1/2 turns, left-hand close wound. (Used in Group 3 only)
L2154		
L2155	4035216-P1	Coils; 5-1/2 turns, left-hand close wound. (Used in Group 4 only)
L2156		

SYMBOL	G-E PART NO	DESCRIPTION
REMOTE ADAPTER BOARD		
MODELS 4KC13A10, 11		
PL-5486956-G1, 2		
CAPACITORS		
C51	7486445-P5	Electrolytic, non-polarized; 4 μ f +100% -10%, 150 VDCW.
RECTIFIERS		
CR51	5490415-P2	Silicon; model 4KC13A10 only.
CR52		
RELAYS		
K51	5491595-P32	120 VDC, 15,000 ohms; 5 form "C" contacts; sim to Allied T154.
K52	5491595-P32	120 VDC, 15,000 ohms; 4 form "C" contacts; sim to Allied T154. Model 4KC13A10 only.
TERMINALS		
P85	4029840-P1	Taper pin connector; sim to Amp 41854 or Kent 123946. Model 4KC13A10 only.
P87		
P89	4036634-P1	Receptacle, pin; phos bronze, tin plated; sim to Amp 42428-2.
P71		
RESISTORS		
R51	7491365-P11	Potentiometer, carbon film; 250 ohms $\pm$ 20%, 0.15 w, linear taper, slotted shaft; sim to UPE-70
R52	C-3879-P113J	Fixed composition; 13,000 ohms $\pm$ 5%, 2 w.
R53	C-3877-P181K	Fixed composition; 180 ohms $\pm$ 10%, 1/2 w.
TRANSFORMERS		
T51	19C300687-P1	Audio; epoxy-filled metal can; freq range 300 cps to 3000 cps. DC resistance: Terms 1-2: 15.5 ohms $\pm$ 10% Terms 3-4: 15.5 ohms $\pm$ 10% Terms 5-6: 6.5 ohms $\pm$ 10%
CABLES		
W51	4037741-G1	Jumper - consisting of 2.20 in. wire, G-E Dwg. 7142367-P4, and 2 taper pin connectors, G-E Dwg. 4029840-P1.
W52		
W53	4037741-G1	Jumper - consisting of 2.20 in. wire, G-E Dwg. 7142367-P4 and 2 taper pin connectors, G-E Dwg. 4029840-P1. Model 4KC13A10 only.
W54		
W56	4037741-G1	Jumper - consisting of 2.20 in. wire, G-E Dwg. 7142367-P4 and 2 taper pin connectors, G-E Dwg. 4029840-P1. Model 4KC13A10 only.
W57		
SOCKETS		
YK51	5491595-P5	Relay; sim to Allied 30054-2.
YK51	5491595-P5	Relay; sim to Allied 30054-2. Model 4KC13A10 only.

SYMBOL	G-E PART NO	DESCRIPTION
MODIFICATION KIT		
PL-4037104-G1 thru G3		
SUB-ASSEMBLIES		
PL-4037102-G1 thru G3		
Switch Assn; Includes the following		
JACKS AND RECEPTACLES		
		Pin; contact; Brass, cad plated, sim to Bead Chain L93-3. Used in G2 and G3 only
PLUGS		
J1	4033513-P4	Terminal; taper pin connector; sim to Amp 41854 or Kent 123946. Used in G2 and G3 only
P1	4029840-P1	Terminal; taper pin connector, sim to Amp 41854 or Kent 123946. Used in G1 and G3 only.
P2		
P3		
P4		
P5		
P6		
P7		
P8		
P9		
SWITCHES		
S1	18N200194-P1	Rotary; melamine, non-shorting, 36° indexing, 1 pole, 2 position. 10 milliamperes at 115 VDC, 1 amp at 28 VDC; sim to Grayhill Series 5000 Used in G1 and G2 only
S2	5495227-P12	Rotary, phenolic, shorting contacts, 1 section 2 pole, 4 position; 3 amps at 25 VDC, 1 amp at 110 VDC. sim to Pals P. Used in G3 only.
MISCELLANEOUS		
	5495256-P1	Knob; butyrate; red - orange, for flattened shaft Eastman Cat. 32599



DATAFILE BULLETIN

Purpose: SQUELCH CONTROL IMPROVED UNDER HIGH NOISE CONDITIONS

Equipment: IF/Audio Board for 27—50 MC G-E Pacer Receivers

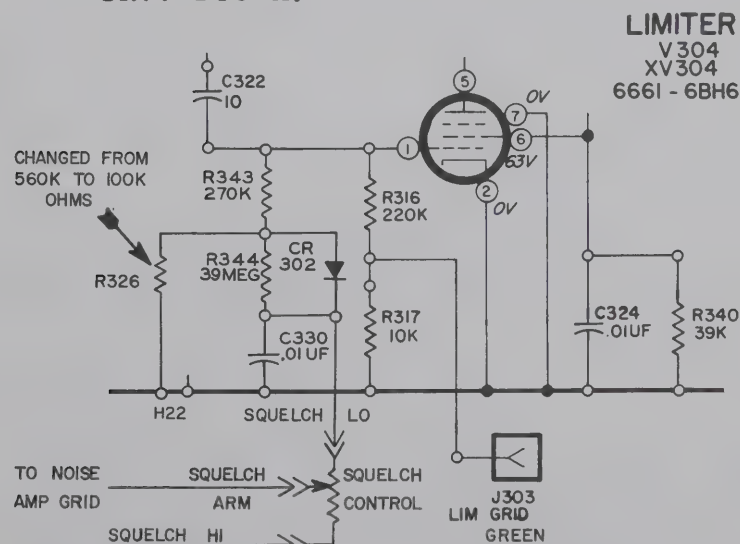
Revision:	<u>Model Number</u>	<u>Revision</u>
	4EL12B10	D

Symptoms: Loss of squelch control under high noise conditions.

Cause: Excessively high voltage at the noise amplifier grid.

Solution: Revision D reduced the voltage at the noise amplifier grid by limiting the voltage available to the SQUELCH control. This was done by reducing the value of resistor R326 from 560K ohms to 100K ohms.

<u>Symbol</u>	<u>Was</u>	<u>Changed To</u>
R326	Resistor, composition: 560,000 ohms $\pm 10\%$, 1/2 watt. G-E Part No. 3R77-P564K.	Resistor, composition: 100,000 ohms $\pm 10\%$, 1/2 watt. G-E Part No. 3R77-P104K.



Ordering Info: Resistor R326 (G-E Part No. 3R77-P104K) is available from Service Parts.



communications

DATAFILE BULLETIN

FILE UNDER: COMBINATIONS

G-E PACER:
27--50 MC

BULLETIN NO: 9008-2

DATE: April 1962

Purpose: SQUELCH OPERATION IMPROVED

Equipment: Pacer low-band receiver IF/Audio Board

Revision:	<u>Model</u>	<u>Revision</u>
	4EL12B10	B

Symptoms: Erratic operation of squelch, caused by ignition and electrical disturbances from sources other than the vehicle's ignition system in which the unit is mounted.

Solution: Revision B modified the limiter's squelch and noise amplifier circuits, in order to:

- Improve sensitivity
- Provide an IF gain control
- Improve squelch stability

The voltage from the limiter to SQUELCH LO was reduced by adding a 560K-ohm resistor across R344 and C330. This was done to lower the noise amplifier bias.

To prevent squelch clipping, an audio filter was added in the SQUELCH HI circuit, keeping audio frequencies above 5 KC from appearing at the noise amplifier grid. Since the filter introduces a loss in the circuit, a diode was added to change the present rectifier circuit to a voltage doubler. This insures that the first audio amplifier will be cut off during no-signal conditions.

To further prevent squelch clipping, a potentiometer was added to the cathode of the second low IF amplifier, limiting the voltage applied to the limiter grid.

Change: To add Revision B in the field:

NOTE

Revision A must be present in IF/Audio Board 4EL12B10 or FEB Kit No. 208 must be installed before Revision B is made (see DATAFILE Bulletin 9008-1).

1. Replace resistor R331 (220K-ohm, 1/2-watt) with diode CR303, observing the polarity indicated in Figure 1.

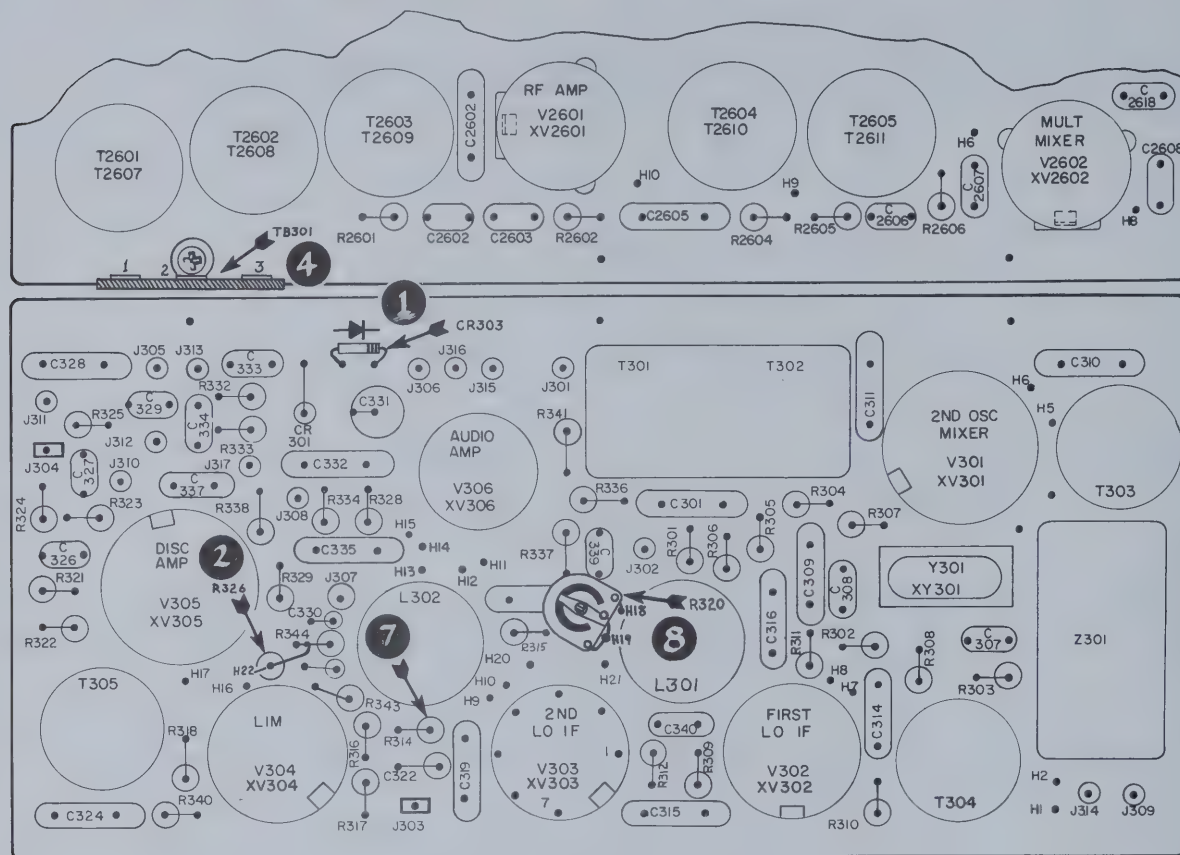


Figure 1 - Outline Diagram of IF/Audio Board Model 4EL12B10

2. Add resistor R326 (560K-ohm, 1/2 watt) between hole H22 and the top terminal of R344 (see Figure 1).
3. Mount P301, J318, C312, C313 and L303 on terminal board TB301, as shown in Figure 2.

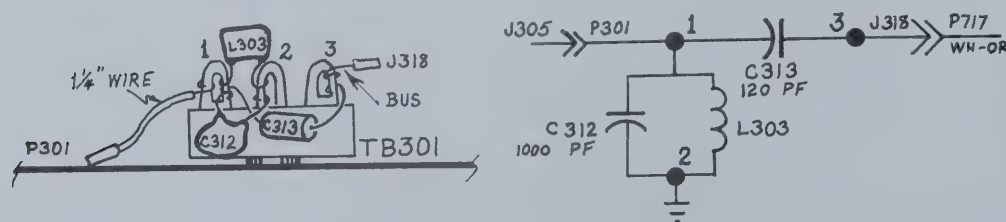


Figure 2 - Audio Filter Outline Diagram and Schematic Diagram

4. Mount TB301 (see Figure 1).
5. Connect P301 to J305 and P717 to J318.
6. Change the revision letter marking on the 4EL12B10 from "A" to "B".

7. Replace resistor R345 (390K-ohm, 1/2-watt) with R314 (68K-ohm, 1/2-watt), as shown in Figure 1.
8. Remove the DA bus between H20 and H21 (2nd Lo-IF cathode). Connect 1K-ohm potentiometer R320 between H18 and H19, as shown in Figures 1 and 3. Use insulating tape on the can of L301 to prevent shorting the leads from the pot.

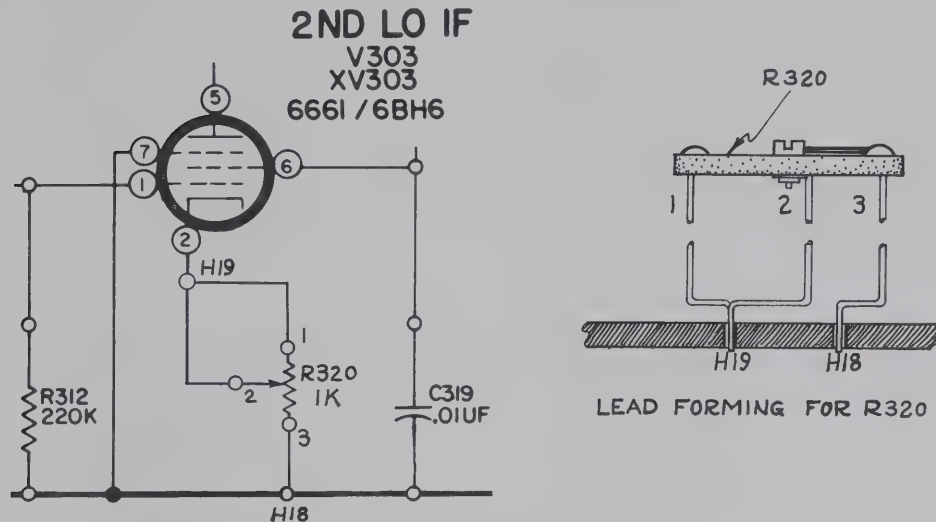


Figure 3 - Installation of IF Gain Control (R320)

10. With a 1-microvolt unmodulated signal applied to the receiver, adjust the pot to give a 10-volt reading at XV304-1 (limiter grid).

Parts Req'd: The parts required for installing Revision B in the field can be obtained by ordering FEB Kit No. 219 from Service Parts:

Symbol No.	Description	G-E Part No.
C312	Capacitor, ceramic disc: 1000 pf $\pm 10\%$, 500 VDCW.	5494481-P12
C313	Capacitor, fixed mica: 120 pf $\pm 5\%$, 500 VDCW.	7489162-P29
CR303	Diode.	5491705-P2
J318	Pin contact: male.	4033513-P4
L303	Choke: 1 Hy.	5491736-P5
P301	Pin Contact: female.	4029840-P1
R314	Resistor, composition: 68K ohms $\pm 10\%$, 1/2 watt.	3R77-P683K
R320	Potentiometer: 1K-ohm $\pm 20\%$, 1/10-watt.	19B201969-P2
R326	Resistor, composition, 560K-ohms $\pm 10\%$, 1/2 watt.	3R77-P564K
TB301	Terminal board: 3-point.	7775500-P7

NOTE

Revision B also changed capacitor T305-C2 from 470 pf (G-E Part No. 7489162-P43) to 68 pf $\pm 5\%$, 300 VDCW, (G-E Part No. 7489162-P45). This change was made to facilitate assembly, rather than to change the performance of the receiver.



DATAFILE BULLETIN

Equipment: 27—50 MC G-E Pacer Transmitter & Receivers

Symptom: PREMATURE FAILURE OF 6-VOLT TUBES

Cause: Because of high battery voltage in some vehicles or high line voltage in some stations, the heater voltage for the 6-volt tubes may be too high, resulting in short tube life.

Factory Solution:	Model Number	Printed Wiring Board	Revision
	4EF21A10	Transmitter Board	G
	4EF21A11	" "	F
	4EG16A10, 11, 12 or 13	Front End/Oscillator Board	A
	4EL12B10	IF/Audio Board	E

These revisions reduced the heater voltage of the 6-volt tubes by adding a dropping resistor on each board in series with the 6-volt heater string. On the Front End/Oscillator Board, the filament voltage connection was moved from J2602 to H1 or H2, so that the oven current does not pass through the dropping resistor. The brown FIL supply wire from the power supply now connects to the short wire added at H1 or H2.

Field Solution: This revision can be made in the field by modifying each of the following boards:

Board to be Modified	Modification Procedure
Transmitter Board 4EF21A10 or 4EF21A11	1. Replace the wire between hole H4 and hole H11 with 3.3-ohm $\pm 10\%$, 2-watt resistor R140. 2. Stamp "Rev. G" on Transmitter Board 4EF21A10 or "Rev. F" on 4EF21A11

cont'd

Field
Solution
(Cont'd):

Front End/ Oscillator Board 4EG16A10, 11, 12 or 13	3. <u>4EG16A10 or 12 only (1-freq)</u>: Replace the wire between H2 and H12 with 2.2-ohm $\pm 10\%$, 2-watt resistor R2617. Use sleeving on the leads and mount the resistor beneath the board. 4. <u>4EG16A11 or 13 only (2-freq)</u>: Replace the wire between H2 and H12 with 1.5-ohm $\pm 10\%$, 2-watt resistor R2618. Use sleeving on the leads and mount the resistor beneath the board. 5. Connect a 2-inch piece of AWG #22 brown wire with a male pin connector at hole H1 on 1-freq models 4EG16A10 & 12 or at hole H2 on 2-freq models 4EG16A11 & 13. 6. Stamp "Rev. A" on the board.
IF/Audio Board 4EL12B10	7. Replace the wire between H8 and H10 with 3.3-ohm $\pm 10\%$, 2-watt resistor R330. Use sleeving on the leads and mount the resistor beneath the board. 8. Stamp "Rev. E" on the board.
Control Unit/ Power Supply 4EC38A10 or 4EC48A10	9. The brown wire from the Control Unit/Power Supply supplies FIL voltage to the Front End/Oscillator Board at J2602 (H12). Unplug this wire and insulate its female connector with a piece of electrical tape. 10. Connect the wire to the short piece of brown wire added in Step. 5.

Ordering
Info:

The components required to make this modification in the field can be obtained by ordering FEB Kit No. 314 (list price \$.85) from Service Parts. The kit includes the following parts:

<u>Qty.</u>	<u>Description</u>	<u>G-E Part No.</u>
2	Resistor, wirewound: 3.3-ohm $\pm 10\%$, 2-w.	19B209022-P127
1	Resistor, wirewound: 2.2-ohm $\pm 10\%$, 2-w.	" -P123
1	Resistor, wirewound: 1.5-ohm $\pm 10\%$, 2-w.	" -P119
1	Pin Connector: male	4033513-P1
2"	Wire: brown, AWG #22	N22-BR

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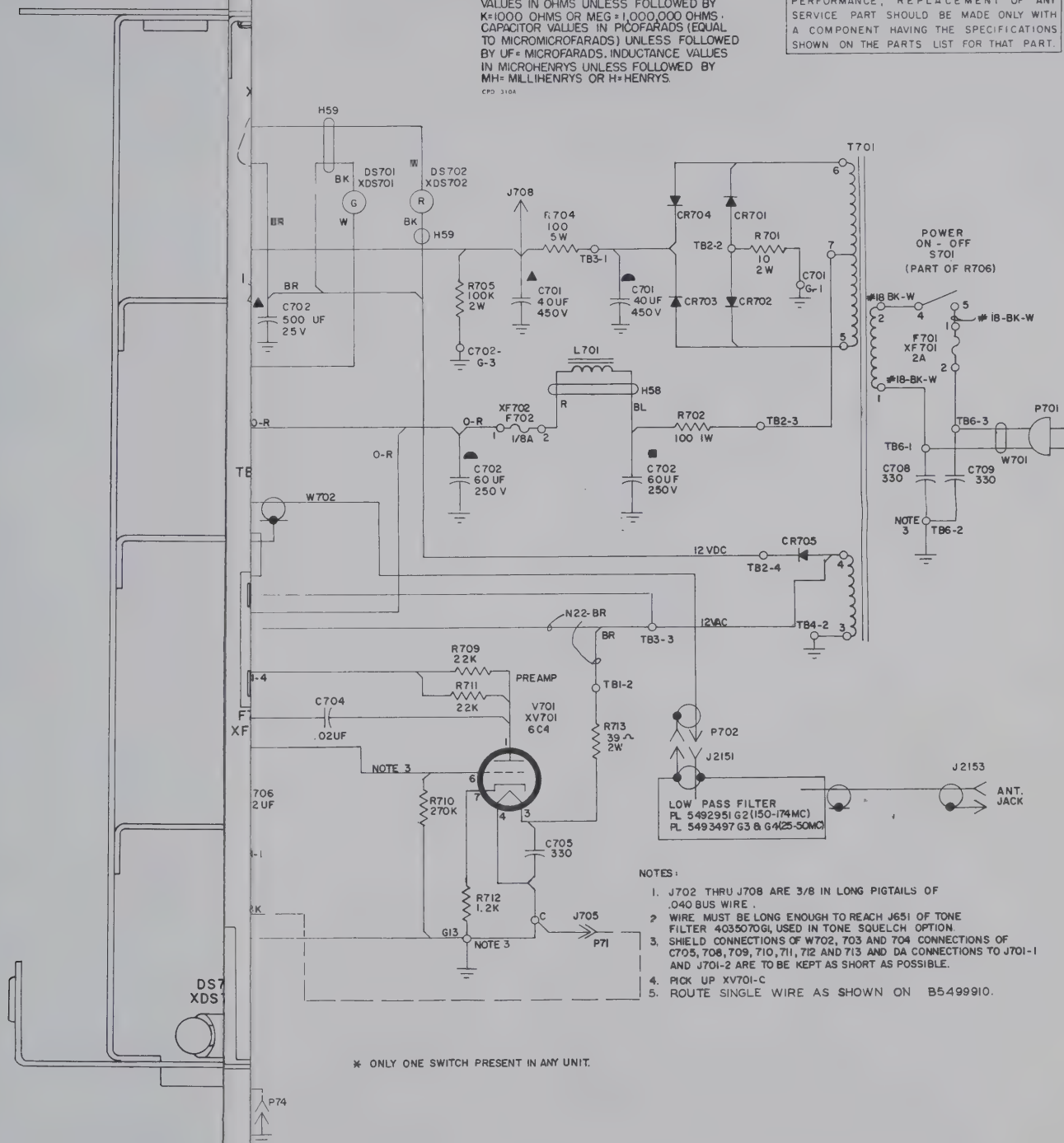
GENERAL  ELECTRIC

COMMUNICATION PRODUCTS DEPARTMENT LYNCHBURG, VIRGINIA

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H= HENRYS.

CPD 310A

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.



Service Sheet

CONTROL UNIT/POWER SUPPLY
PACER HI/BAND DESK STATION
MODEL 4EC48A10

(RC-855A)

Field
Solution
(Cont'd):

Front End/ Oscillator Board 4EG16A10, 11, 12 or 13	3. <u>4EG16A10 or 12 only (1-freq)</u>: Replace the wire between H2 and H12 with 2.2-ohm $\pm 10\%$, 2-watt resistor R2617. Use sleeving on the leads and mount the resistor beneath the board. 4. <u>4EG16A11 or 13 only (2-freq)</u>: Replace the wire between H2 and H12 with 1.5-ohm $\pm 10\%$, 2-watt resistor R2618. Use sleeving on the leads and mount the resistor beneath the board. 5. Connect a 2-inch piece of AWG #22 brown wire with a male pin connector at hole H1 on 1-freq models 4EG16A10 & 12 or at hole H2 on 2-freq models 4EG16A11 & 13. 6. Stamp "Rev. A" on the board.
IF/Audio Board 4EL12B10	7. Replace the wire between H8 and H10 with 3.3-ohm $\pm 10\%$, 2-watt resistor R330. Use sleeving on the leads and mount the resistor beneath the board. 8. Stamp "Rev. E" on the board.
Control Unit/ Power Supply 4EC38A10 or 4EC48A10	9. The brown wire from the Control Unit/Power Supply supplies FIL voltage to the Front End/Oscillator Board at J2602 (H12). Unplug this wire and insulate its female connector with a piece of electrical tape. 10. Connect the wire to the short piece of brown wire added in Step. 5.

Ordering
Info:

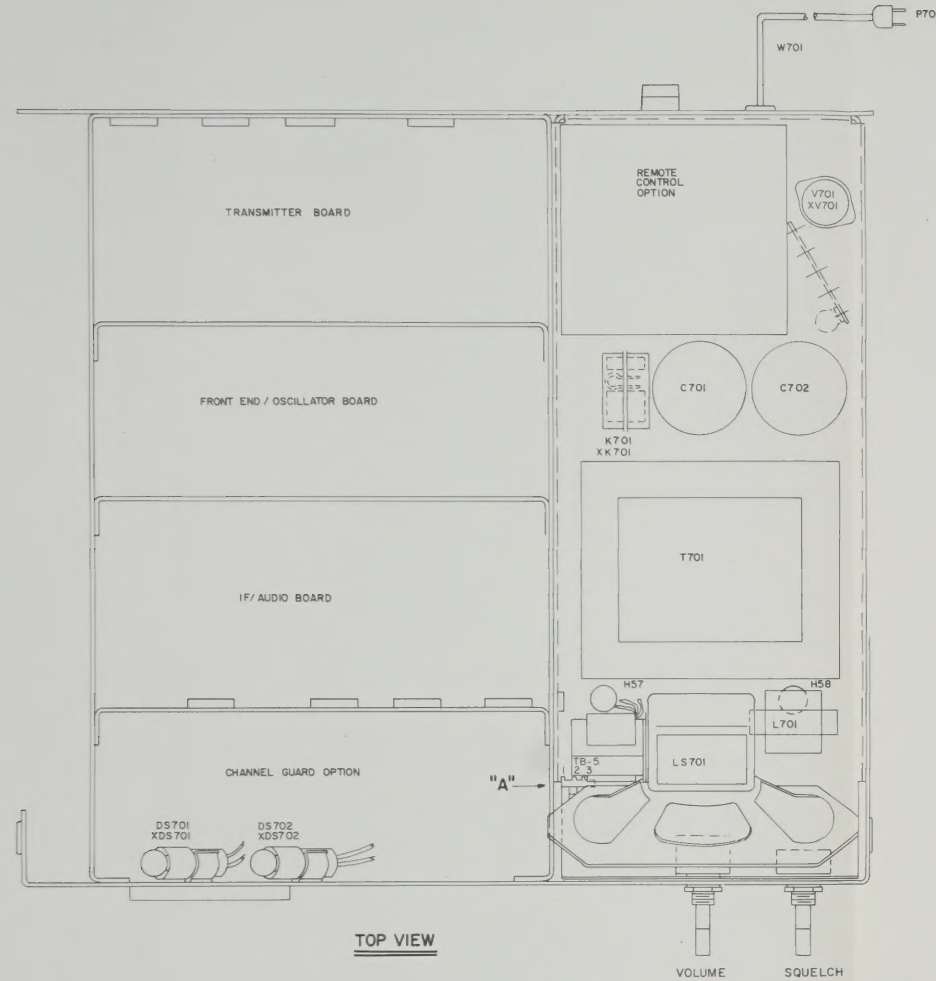
The components required to make this modification in the field can be obtained by ordering FEB Kit No. 314 (list price \$.85) from Service Parts. The kit includes the following parts:

<u>Oty.</u>	<u>Description</u>	<u>G-E Part No.</u>
2	Resistor, wirewound: 3.3-ohm $\pm 10\%$, 2-w.	19B209022-P127
1	Resistor, wirewound: 2.2-ohm $\pm 10\%$, 2-w.	" -P123
1	Resistor, wirewound: 1.5-ohm $\pm 10\%$, 2-w.	" -P119
1	Pin Connector: male	4033513-P1
2"	Wire: brown, AWG #22	N22-BR

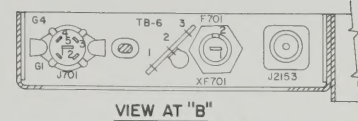
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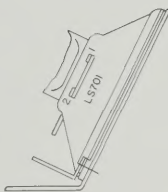
COMMUNICATION PRODUCTS DEPARTMENT LYNCHBURG, VIRGINIA



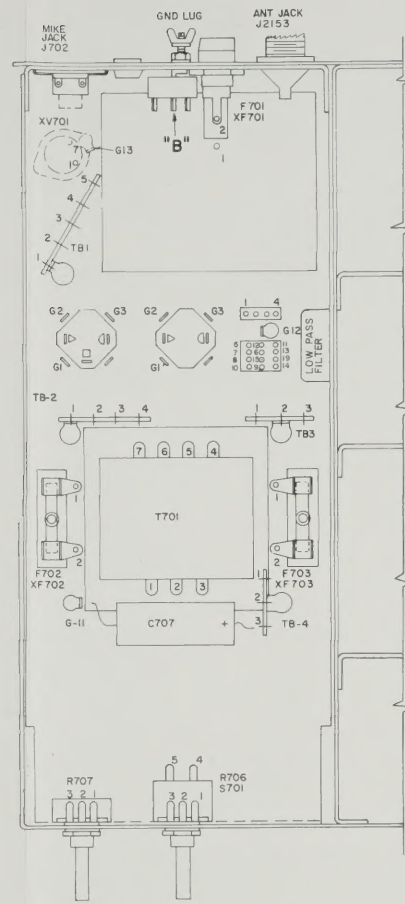
TOP VIEW



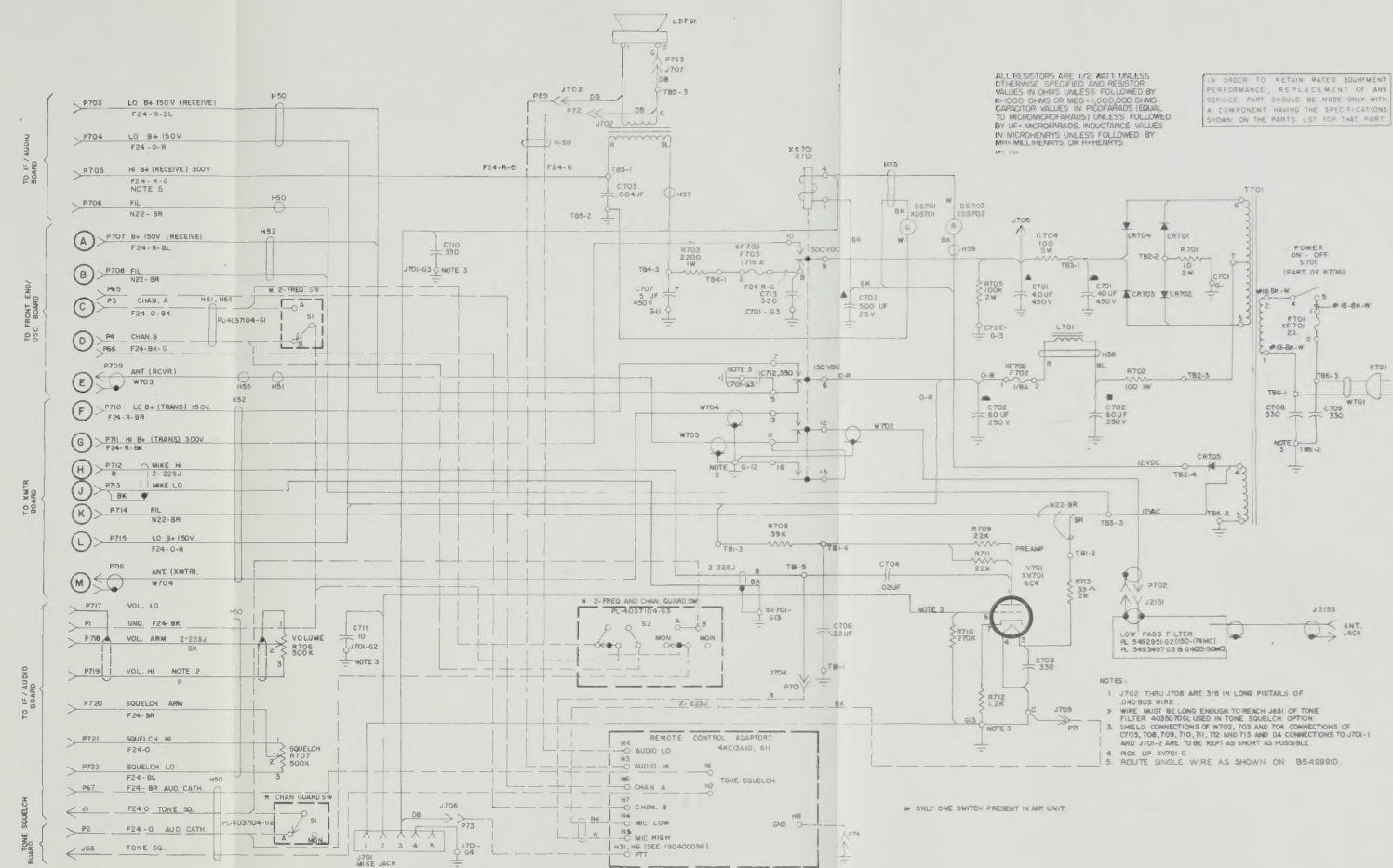
VIEW AT "B"



VIEW AT "A"



BOTTOM VIEW



ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1,000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT
PERFORMANCE, REPLACEMENT OF AN
SERVICE PART SHOULD BE MADE ONLY WITH
A COMPONENT HAVING THE SPECIFICATION
SHOWN ON THE PARTS LIST FOR THAT PART

NOTES:

1. J702 THRU J708 ARE 3/8 IN LONG PISTOLS OF .040 BUS WIRE.
2. WIRE MUST BE LONG ENOUGH TO REACH J631 OF TIME FILTER 4030001 USED TO TIME SQUELCH OPTION.
3. SHIELD CONNECTIONS OF J702, T03 AND T04 CONNECTIONS TO C703, T08, T09, T10, T11, T12 AND T13 AND DA CONNECTIONS TO J701-2 ARE TO BE KEPT AS SHORT AS POSSIBLE.
4. PICK UP XV701-C
5. ROUTE SINGLE WIRE AS SHOWN ON B5400001

* ONLY ONE SWITCH PRESENT IN ANY UNIT

PARTS LIST

CONTROL UNIT POWER SUPPLY
MODEL 4EC48A10
 PL-5499295-G1

SYMBOL	G-E PART NO.	DESCRIPTION
CAPACITORS		
C701	7770994-P23	Dry electrolytic, twist-prong: 40-40 μ f $\pm$ 50% -10%, 450-450 VDCW; sim to Mallory FP.
C702	7476442-P13	Dry electrolytic, twist-prong: 60-60/500 μ f $\pm$ 100% -10%/250% -10%, 250-250/25 VDC.
C703	5494481-P17	Fixed ceramic disc: 4000 pf $\pm$ 20%, 500 VDCW; sim to RMC JF.
C704	7774750-P15	Fixed ceramic disc: .02 μ f $\pm$ 100% -0%, 500 VDC.
C705	7489162-P139	Fixed mica: 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C706	7491930-P10	Wylars, tubular: 0.22 μ f $\pm$ 20%, 100 VDCW; sim to Good-All 663-UV.
C707	7774786-P40	Electrolytic: 5 μ f $\pm$ 50% -10%, 450 VDC; sim to Mallory TC70.
C708 thru C710	7489162-P139	Fixed mica: 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C711	7489162-P106	Fixed mica: 10 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
C712 and C713	7489162-P139	Fixed mica: 330 pf $\pm$ 10%, 500 VDCW; sim to Electromotive Mfg DM15.
RECTIFIERS		
CR701 thru CR703	5490415-P2	Silicon.
INDICATING DEVICES		
D8701 and D8702		Incandescent: Min. bay. base, 14.5 v, 0.12 amps. G-E Type 53.
FUSES		
F701	1816-P5	Quick blowing: 2 amps, 250 v; sim to Littell-fuse 312.002 or Bussmann AGC-2.
F702	1816-P12	Quick blowing: 1/8 amps, 250 v; sim to Littell-fuse 312.125 or Bussmann AGC-1/8.
F703	1816-P11	Quick blowing: 1/16 amps, 250 v; sim to Littell-fuse 312.062 or Bussmann AGC-1/16.
JACKS AND RECEPTACLES		
J701	5493018-P1	Connector: 5 contacts, phenolic; sim to Cinch 203-31-05-005.
J702 thru J708		3/8 in. of .04 buss wire.
RELAYS		
R701	5491595-P28	12 VDC, 185 ohms, 4 form C contacts; sim to Allied T134-CC-CC.
INDUCTORS		
L701	7489398-P1	Reactor: 1.5 h., .085 amps DC, DC res 150 ohms max.
LOUDSPEAKERS		
L8701	5496301-P5	Speaker and Transformer Ass. Includes the following: Speaker: 3 x 5 in., voice coil imp 3.2 ohms $\pm$ 10%, 2 w. Transformer, audio: Pri: 5600 ohms tap $\pm$ 10% at 1.5 v, Sec 1: 3.2 ohms imp $\pm$ 10% at 1.5 v.

SYMBOL	G-E PART NO.	DESCRIPTION
PLUGS		
P701		(Included in W701).
P702		(Included in W702).
P703 thru P708	4028840-P1	Terminal: Taper pin connector; sim to Amp 41854 or Kent 123946.
P709		(Included in W703).
P710 thru P713	4028840-P1	Terminal: Taper pin connector; sim to Amp 41854 or Kent 123946.
P716		(Included in W704).
P717 thru P722	4028840-P1	Terminal: Taper pin connector; sim to Amp 41854 or Kent 123946.
P723	4036034-P1	Receptacle, pin: Phos bronze, tin plated; sim to Amp 42428-2.
RESISTORS		
R701	3R78-P100K	Fixed composition: 10 ohms $\pm$ 10%, 2 w.
R702	3R78-P101K	Fixed composition: 100 ohms $\pm$ 10%, 1 w.
R703	3R78-P222K	Fixed composition: 2200 ohms $\pm$ 10%, 1 w.
R704	7478711-P21	Wirewound: 100 ohms $\pm$ 5%, 5 w; sim to Sprague SKT.
R705	3R79-P104K	Fixed composition: 0.10 megohm $\pm$ 10%, 2 w.
R706	5493662-P4	Potentiometer, carbon film: 500,000 ohms $\pm$ 20%, 0.125 v, mod log taper; sim to CTS Series 45.
R707	5493662-P3	Potentiometer, carbon film: 500,000 ohms $\pm$ 20%, 0.25 v, linear taper; sim to CTS Series 45.
R708	3R77-P393K	Fixed composition: 39,000 ohms $\pm$ 10%, 1/2 w.
R709	3R77-P223K	Fixed composition: 22,000 ohms $\pm$ 10%, 1/2 w.
R710	3R77-P274K	Fixed composition: 0.27 megohm $\pm$ 10%, 1/2 w.
R711	3R77-P223K	Fixed composition: 22,000 ohms $\pm$ 10%, 1/2 w.
R712	3R77-P122K	Fixed composition: 1,200 ohms $\pm$ 10%, 1/2 w.
R713	3R79-P390K	Fixed composition: 39 ohms $\pm$ 10%, 2 w.
SWITCHES		
S701		(Included in R706).
TRANSFORMERS		
T701	19C300671-P1	Power, filament, rectifier, single phase: Pri: 117 v, 50/60 cycles, Sec 1: 150 v, Sec 2: 300 v.
TUBES		
V701		Type 6C4.
CABLES		
W701	4036441-P18	Flameless cord set: Includes 8 ft cable, molded plastic plug on one end.
W702	5491589-P18	Cable ass: Includes 6 in. $\pm$.12 RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W703	5491089-P24	Cable ass: Includes 16 in. $\pm$.12 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
W704	5491589-P17	Cable ass: Includes 10 in $\pm$ 0.125 of RG-174/U cable, phono jack on left end and phono connector molded on coax. cable on right end.
SOCKETS		
XD8701	4032220-P3	Lamp: Min. bay. base, 9 and 15-in. leads; sim to Drake NS17.
XD8702	4032220-P4	Lamp: Min. bay. base, 13.5-in. leads; sim to Drake NS17.
XF701	7115179-P1	Holder, Fuse: (3AG), 15 amps, 250 v; sim to Bussmann HKP.
XF702	40371010-P1	Holder, Fuse: Used with 1.25 x 0.25 fuse, 15 amp at 125 vac or DC; sim to Connector Corp F2R.
XK701	5491505-P5	Relay: Nylon, 16-contacts; sim to Allied 30054-2.
XV701	7768887-P9	Tube: 7 pin min, mica-filled phenolic; sim to Elco 235 PB-3702.

SYMBOL	G-E PART NO.	DESCRIPTION
LOW-PASS FILTER		
		PL-5492951-G2
CAPACITORS		
C2151 and C2152	7489162-P5	Fixed silver mica, dipped phenolic insulation: 9 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2153	7489162-P13	Fixed silver mica, dipped phenolic insulation: 27 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
C2154	7489162-P9	Fixed silver mica, dipped phenolic insulation: 18 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15.
JACKS AND RECEPTACLES		
J2151	7104941-P4	Phono-type: mica-filled phenolic or ceramic and XXSP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 v rms, 500 VDC; sim to Cinch 14H12699.
J2153	M2R22-P3	Connector, receptacle, panel: mica-filled; sim to Amphenol 83-1R or Signal Corps 90-239.
INDUCTORS		
L2151 and L2152	4034548-P1	Coils: 2-1/4 turns, close wound.
LOW-PASS FILTER		
		PL-5493497-G3 & G4
CAPACITORS		
C2152	7489162-P19	Fixed silver mica, dipped phenolic insulation: 47 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2153	7489162-P25	Fixed silver mica, dipped phenolic insulation: 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2154	7489162-P21	Fixed silver mica, dipped phenolic insulation: 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 3 only)
C2155	7489162-P21	Fixed silver mica, dipped phenolic insulation: 56 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2156	7489162-P27	Fixed silver mica, dipped phenolic insulation: 100 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
C2157	7489162-P25	Fixed silver mica, dipped phenolic insulation: 82 pf $\pm$ 5%, 500 VDCW; sim to Electro Motive Mfg DM15. (Used in Group 4 only)
JACKS AND RECEPTACLES		
J2151	7104941-P4	Jack: phono-type: mica-filled phenolic or ceramic and XXSP phenolic insulation, brass shell, brass spring contact, max operating voltage 350 v rms, 500 VDC; sim to Cinch 14H12699.
J2153	M2R22-P3	Connector, receptacle, panel: mica-filled; sim to Amphenol 83-1R or Signal Corps 90-239.
INDUCTORS		
L2153 and L2154	4035215-P1	Coils: 4-1/2 turns, left-hand close wound. (Used in Group 3 only)
L2155 and L2156	4035216-P1	Coils: 5-1/2 turns, left-hand close wound. (Used in Group 4 only)

SYMBOL	G-E PART NO.	DESCRIPTION
MODIFICATION KIT		
		PL-4037104-G1 thru G3
SUB-ASSEMBLIES		
		Switch Ass: Includes the following:
JACKS AND RECEPTACLES		
J1	4033513-P4	Pin; contact: Brass, cad plated; sim to Bead Chain L93-3. Used in G2 and G3 only.
PLUGS		
P1 and P2	4029840-P1	Terminal: taper pin connector; sim to Amp 41854 or Kent 123946. Used in G2 and G3 only.
P3 thru P5	4029840-P1	Terminal: taper pin connector; sim to Amp 41854 or Kent 123946. Used in G1 and G3 only.
SWITCHES		
S1	19B200394-P1	Rotary, melamine, non-shorting, 36° indexing, 1 pole, 2 position, 10 milliamps at 115 VDC, 1 amp at 28 VDC; sim to Grayhill Series 3000. Used in G1 and G2 only.
S2	5495227-P12	Rotary, phenolic, shorting contacts, 1 section, 2 pole, 4 position; 3 amps at 25 VDC, 1 amp at 110 VDC; sim to Pals F. Used in G3 only.
MISCELLANEOUS		
	4039182-G1	Knob: butyrate; red - orange, for flattened shaft. Eastman Cat. 32599.

